



**TiefbohrSysteme<sup>®</sup>** GmbH

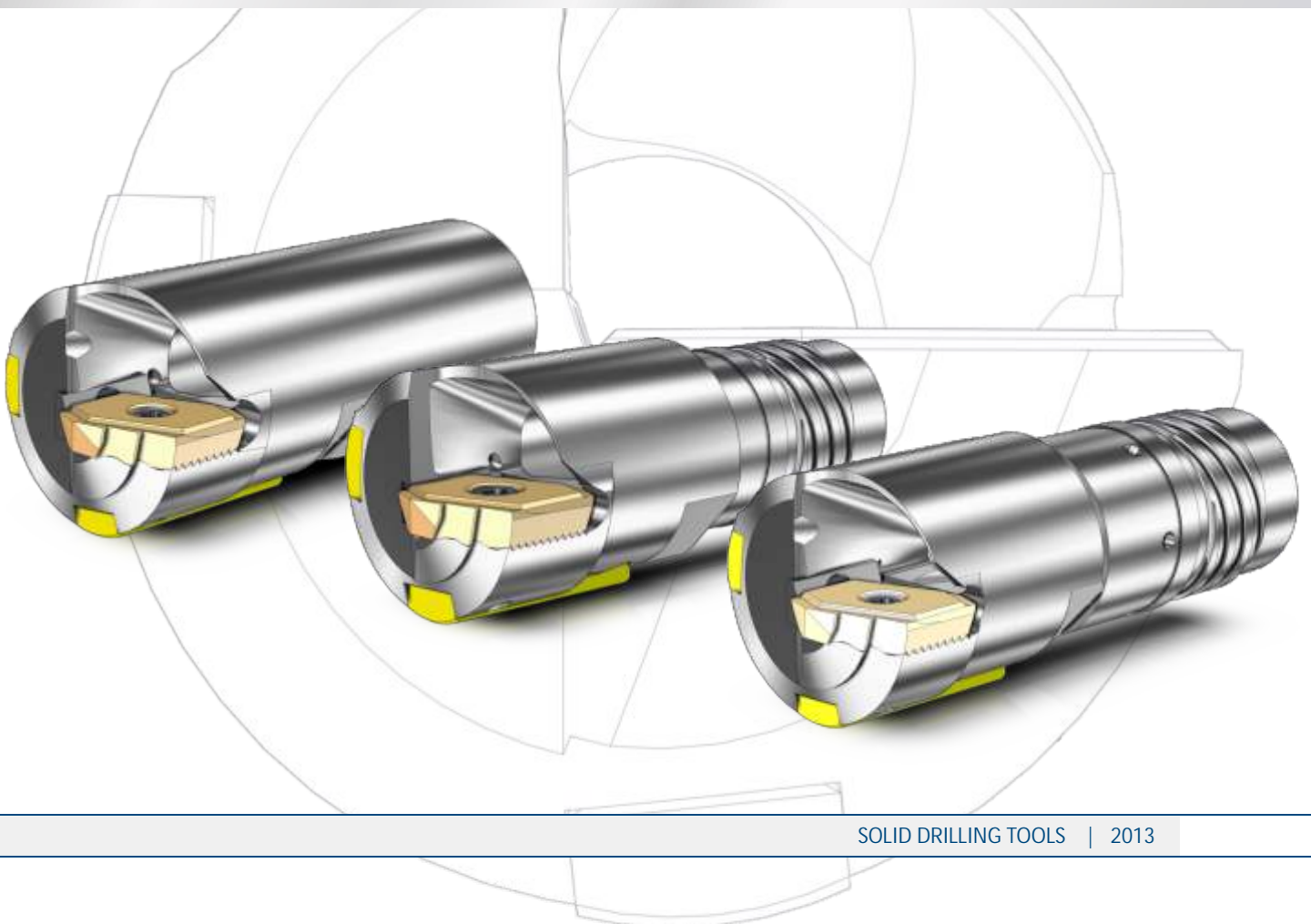
DEEP HOLE BORING TECHNOLOGY | EQUIPMENT

## Solid Drilling Tools

Type 1465 / 1466 / 1467

DEEP HOLE DRILLING TOOLS

BORING RANGE Ø16,00 - 35,00 mm



## Properties of BTA Deep Hole Boring Tools

### 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 these two factors. In the field of deep hole boring our company, BTA-Tiefbohrsysteme GmbH, is an 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 to tool service. All this is aimed at your success.

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, 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 such as straightness, surface, material and even wall thickness.
- Equipment matched to the deep hole boring process - from workpiece clamping to vibration damping.
- Production-optimized machinery layout e.g. for reducing setup and conversion times.

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

- Surface  $R_a < 0.1 \mu\text{m}$  e.g. by skiving and roller burnishing
- Mismatch of axes  $< 0.1\text{mm/m}$  e.g. by pull counter boring
- Hole accuracy  $< IT8$  e.g. by skiving

Benefit from these advantages by cooperating with a strong partner.





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### Tool description

Solid drilling tool with one indexable insert and two guide pads.

The drill diameter is fixed.

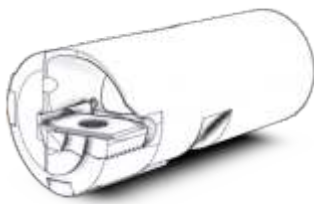
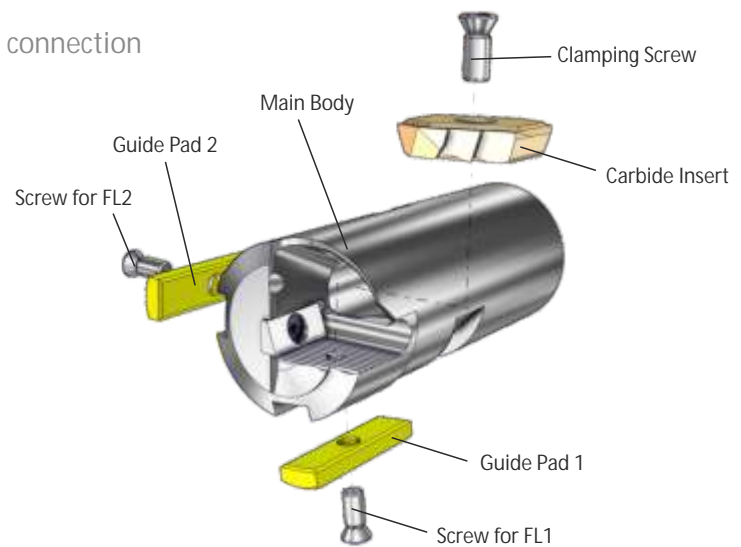
Available as bta- and ejector-tool.

### Tool characteristics

- drilling depth 100 x tool diameter
- surface  $R_a$  1,25  $\mu$ m
- mismatch of axes 0,2 mm/m
- drilling accuracy IT9

## Solid Drilling Tools Type 1465

Boring range: Ø16,00 - 35,00 mm - BTA drill tube connection



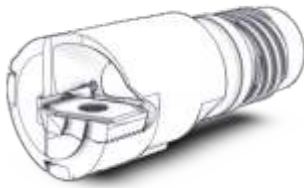
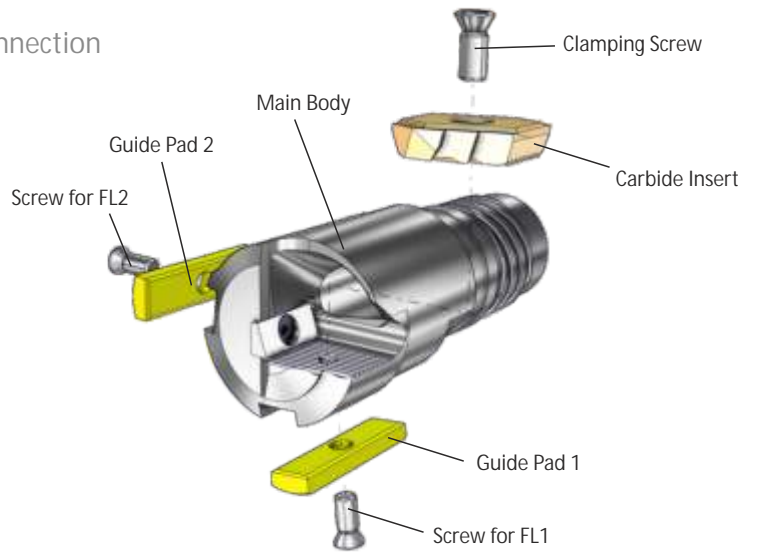
Boring Range	Drill Tube Connection	Carbide Insert	Clamping Screw	Guide Pad FL1 and FL2	Screw for FL1 and FL2	Wrench	
						Size	Ident-No.
Ø 16,00 - Ø 16,50	14	E 10	M2,5x5 T8	FL 5 / R6	M2,5x5 T8	SW 12	009.0003.C
Ø 16,51 - Ø 18,00	15					SW 13	008.7157.X
Ø 18,01 - Ø 19,99	16,5	E 20	M3x5,8 T9	FL 6 / R7	M3x5,1 T9	SW 14	008.0004.D
Ø 20,00	18						
Ø 20,01 - Ø 21,99	20	E 30	M3x7,4 T9	FL 6 / R9	M3x5,8 T9	SW 17	008.7821.Q
Ø 22,00 - Ø 23,00							
Ø 23,01 - Ø 24,99	22	E 40	M4x8,2 T15	FL 8 / R10	M3x7,4 T9	SW 19	008.7471.R
Ø 25,00 - Ø 26,40							
Ø 26,41 - Ø 26,99	24	E 50	M4x10 T15	FL 8 / R10	M3x7,4 T9	SW 22	008.6762.K
Ø 27,00 - Ø 29,99							
Ø 30,00 - Ø 31,00	26	E 60	M4x10 T15	FL 8 / R10	M3x7,4 T9	SW 24	008.6754.X
Ø 31,01 - Ø 31,99							
Ø 32,00 - Ø 33,99	28	E 60	M4x10 T15	FL 8 / R10	M3x7,4 T9	SW 24	008.6754.X
Ø 34,00 - Ø 35,00							

See Page 7 for Cutting Inserts, Guide Pads and Screws ordering data



## Solid Drilling Tools Type 1466

Boring range: Ø16,00 - 35,00 mm - STS drill tube connection

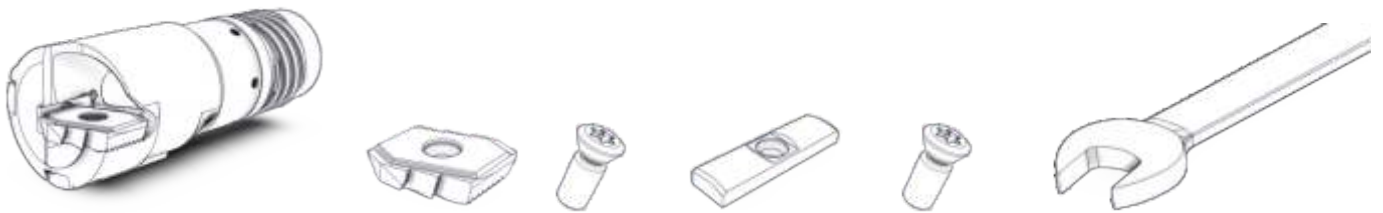
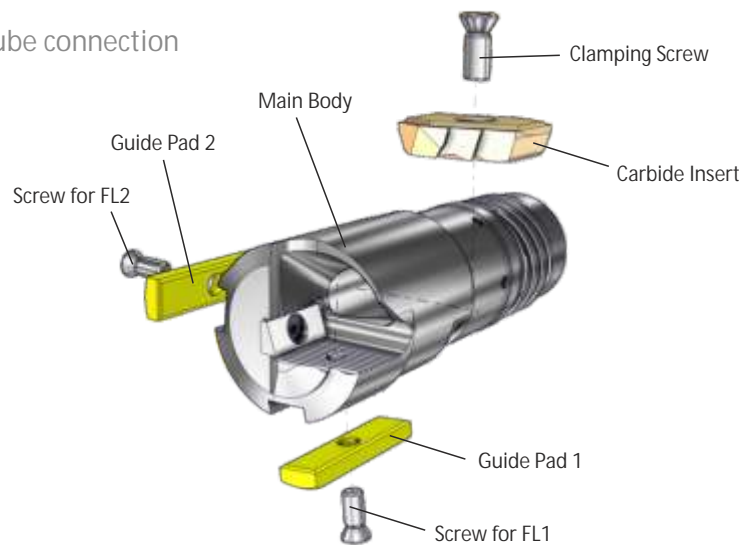


Boring Range	Drill Tube Connection	Carbide Insert	Clamping Screw	Guide Pad FL1 and FL2	Screw for FL1 and FL2	Wrench	
						Size	Ident-No.
Ø 16,00 - Ø 16,70	14					SW 12	009.0003.C
Ø 16,71 - Ø 17,70	15	E 10	M2,5x5 T8	FL 5 / R6	M2,5x5 T8	SW 13	008.7157.X
Ø 17,71 - Ø 18,00	16	E 20	M3x5,8 T9	FL 6 / R7	M3x5,1 T9	SW 14	009.0004.D
Ø 18,01 - Ø 18,90							
Ø 18,91 - Ø 20,00	17				M3x5,8 T9	SW 16	009.0005.E
Ø 20,01 - Ø 21,80	18	E 30				SW 17	008.7821.Q
Ø 21,81 - Ø 23,00	20	E 40	M3x7,4 T9	FL 6 / R9		SW 19	008.7471.R
Ø 23,01 - Ø 24,10							
Ø 24,11 - Ø 25,50	22						
Ø 25,51 - Ø 26,40	24	E 50	M4x8,2 T15		M3x7,4 T9	SW 22	008.6762.K
Ø 26,41 - Ø 28,70							
Ø 28,71 - Ø 30,00	26			FL 8 / R10			
Ø 30,01 - Ø 31,00	28	E 60	M4x10 T15			SW 24	008.6754.X
Ø 31,00 - Ø 33,30							
Ø 33,31 - Ø 35,00	30						

See Page 7 for Cutting Inserts, Guide Pads and Screws ordering data

## Solid Drilling Tools Type 1467

Boring range: Ø18,40 - 35,00 mm - Ejector drill tube connection



Boring Range	Drill Tube Connection	Carbide Insert	Clamping Screw	Guide Pad FL1 and FL2	Screw for FL1 and FL2	Wrench	
						Size	Ident-No.
Ø 18,40 - Ø 18,90	18	E 20	M3x5,8 T9	FL 6 / R7	M3x5,1 T9	SW 14	009.0004.D
Ø 18,91 - Ø 20,00						SW 16	009.0005.E
Ø 20,01 - Ø 21,80	19,5	E 30	M3x7,4 T9	FL 6 / R9		SW 17	008.7821.Q
Ø 21,81 - Ø 23,00						SW 19	008.7471.R
Ø 23,01 - Ø 24,10	21,5	E 40				SW 22	008.6762.K
Ø 24,11 - Ø 25,50						SW 24	008.6754.X
Ø 25,51 - Ø 26,40	23,5	E 50	M4x8,2 T15	FL 8 / R10	M3x7,4 T9	SW 27	010.8929.H
Ø 26,41 - Ø 28,70							
Ø 28,71 - Ø 30,00	26	E 60	M4x10 T15				
Ø 30,01 - Ø 31,00							
Ø 31,00 - Ø 33,30	28	E 50					
Ø 33,31 - Ø 35,00							

See Page 7 for Cutting Inserts, Guide Pads and Screws ordering data

## Spare and wear parts

For Solid Drilling Tools Type 1465 / 1466 / 1467

Indexable Inserts size E 10 - E 60

Description	Chip Breaker	Carbide		
		P25 TiN	P40 TiN	K20 TiN
E 10	Size 1 - 1,2x0,45	019.3051.F	019.3586.N	019.3572.Y
	Size 2 - 1,5x0,45	019.3600.C	019.3628.G	019.3614.S
E 20	Size 1 - 1,2x0,45	019.3053.H	019.3588.Q	019.3574.A
	Size 2 - 1,5x0,45	019.3602.E	019.3630.J	019.3616.U
E 30	Size 1 - 1,4x0,45	019.3055.K	019.3590.S	019.3576.C
	Size 2 - 1,7x0,45	019.3604.G	019.3632.L	019.3618.W
E 40	Size 1 - 1,5x0,45	019.3057.M	019.3592.U	019.3578.E
	Size 2 - 1,8x0,45	019.3606.J	019.3634.N	019.3620.Y
E 50	Size 1 - 1,6x0,45	019.3059.P	019.3594.W	019.3580.G
	Size 2 - 1,9x0,45	019.3608.L	019.3636.Q	019.3622.A
E 60	Size 1 - 1,8x0,45	019.3061.R	019.3596.Y	019.3582.J
	Size 2 - 2,1x0,45	019.3610.N	019.3638.S	019.3624.C

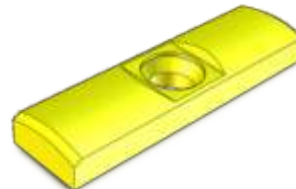


Chip breaker Size 1 for unalloyed steels C > 0.2, alloyed steels, heat-treated steels, tool steel  
 Chip breaker Size 2 for unalloyed steels C < 0.2, long chipping special purpose steel, stainless and acid-resistant steel

Additional chip breakers and coatings on request

Guide Pads FL 5 - FL 8

Description	Radius	Carbide	
		TiN coated	ML coated
FL 5	6	019.6572.Y	019.6672.C
FL 6	7	014.4755.L	019.6674.E
	9	014.4756.J	019.6675.F
FL 8	10	014.4757.G	019.6676.G



Torx-Screw M2,5 - M4

Size	Length	Ident-No. Clamping Screw	Torx Size	Ident-No. Torx-Wrench
M2,5	5	010.8405.U	T8	010.8812.F
	10	010.8778.C		
M3	5,1	014.4771.N	T9	008.1104.D
	5,8	014.4772.L		
	6,2	014.4773.J		
	7,4	008.1065.L		
	9	010.7674.V		
M4	8,2	008.1066.J	T15	008.7219.C
	10	010.7499.M		
	12,5	010.8172.R		





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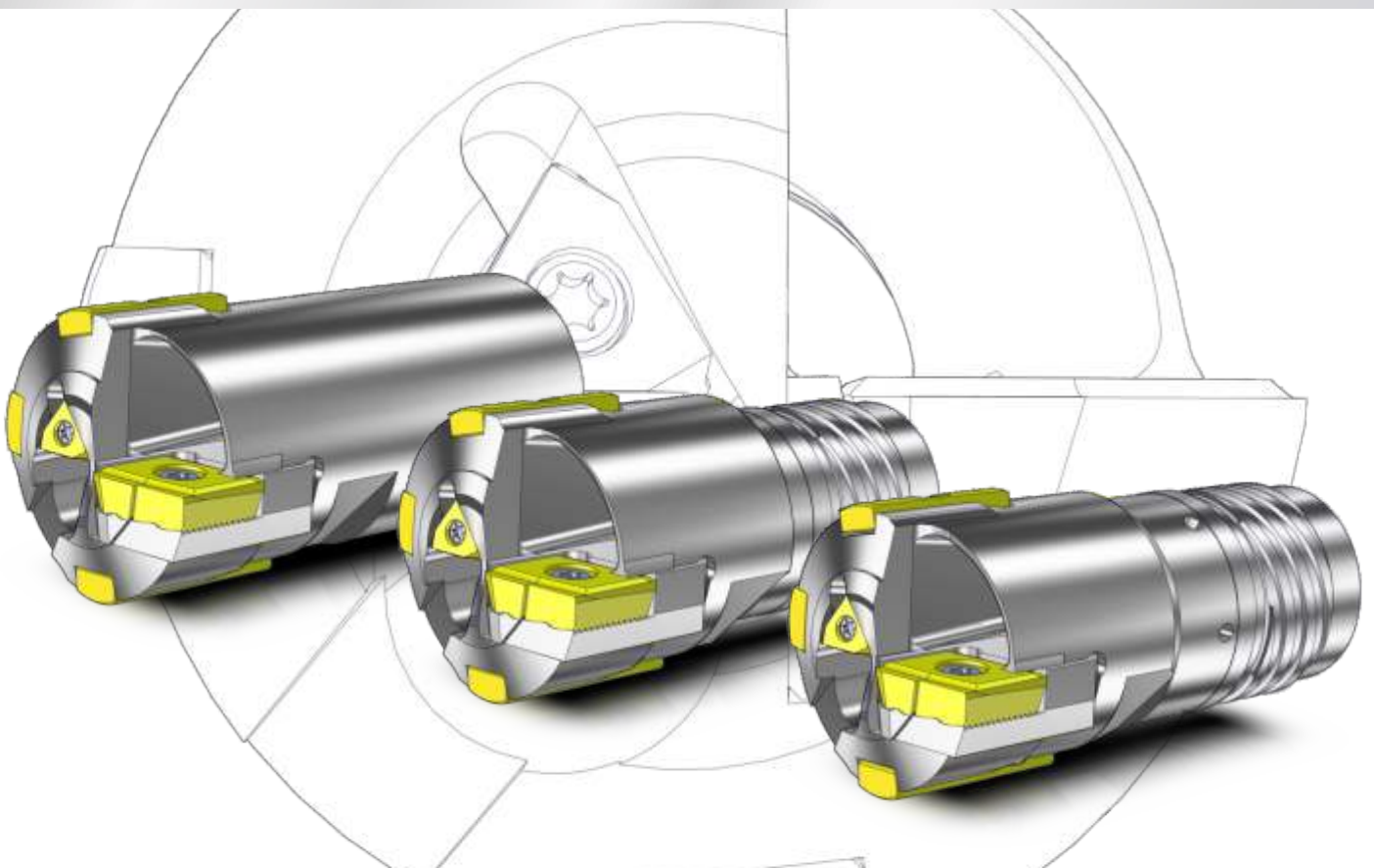
DEEP HOLE BORING TECHNOLOGY | EQUIPMENT

## Solid Drilling Tools

Type 1455 / 1456 / 1458

DEEP HOLE DRILLING TOOLS

BORING RANGE Ø35,01 - 51,00 mm



## Properties of BTA Deep Hole Boring Tools

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- Mismatch of axes  $< 0.1\text{mm/m}$  e.g. by pull counter boring
- Hole accuracy  $< IT8$  e.g. by skiving

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## Contents

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Solid Drilling Tool Type 1455 - BTA	4
Solid Drilling Tool Type 1456 - STS	5
Solid Drilling Tool Type 1458 - Ejector	6
Spare and wear parts	7

### Tool description

Solid drilling tool with two indexable inserts and three guide pads. The drill diameter is fixed.

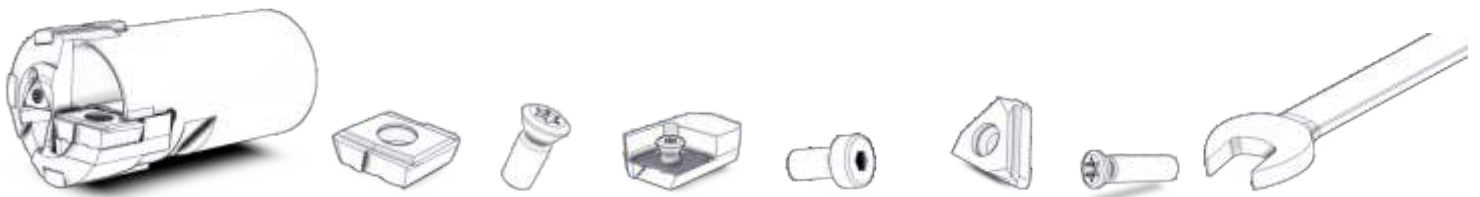
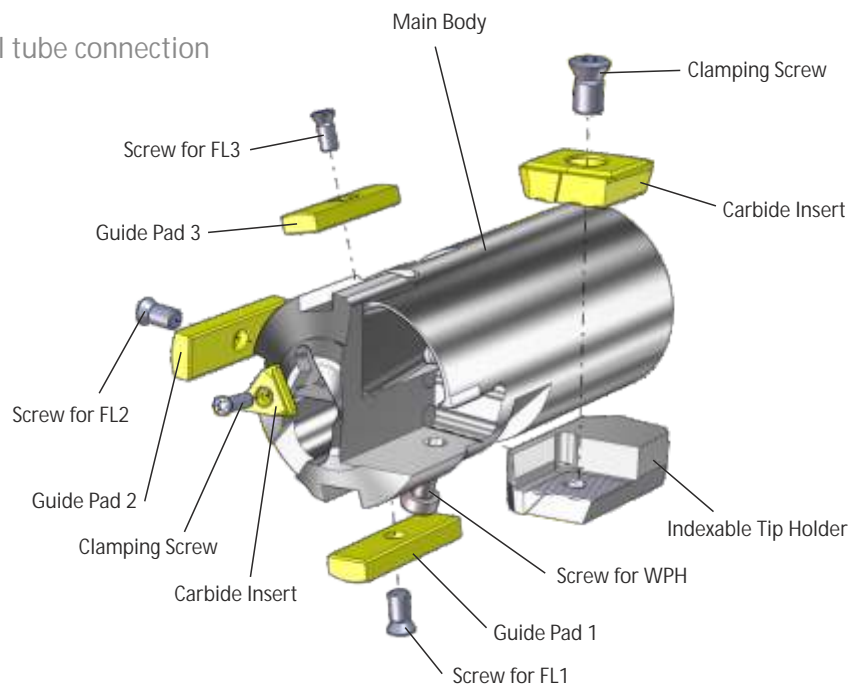
Available as bta- and ejector-tool.

### Tool characteristics

- drilling depth 200 x tool diameter
- surface  $R_a$  1,25  $\mu$ m
- mismatch 0,2 mm/m
- drilling accuracy IT9

## Solid Drilling Tools Type 1455

Boring range: Ø35,01 - 51,00 mm - BTA drill tube connection



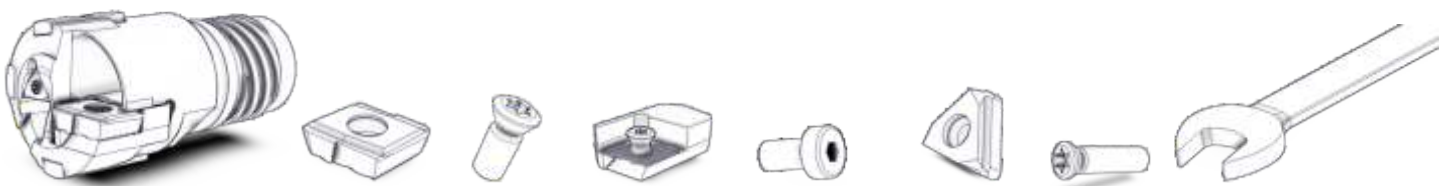
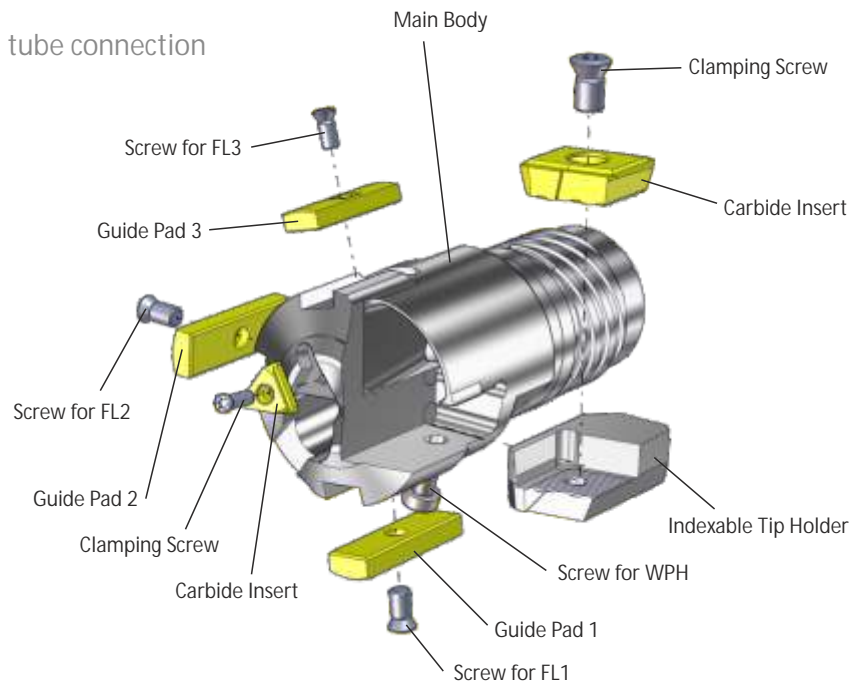
Boring Range	Drill Tube Connection	Peripheral Carbide Insert	Clamping Screw	Indexable Tip Holder	Screw for WPH	Centre Insert	Screw for Centre Insert	Wrench	
								Size	Ident-No.
Ø 35,01 - Ø 36,99	30	A2a	M4x8,2 T15	Size A2a 019.6558.J	M3x6 DIN912			SW 27	010.8929.H
Ø 37,00 - Ø 38,50	33	A2,5a		Size A2,5a 019.6560.L	M3x8 DIN912	Z1 <sup>3</sup>		SW 30	008.7638.F
Ø 38,51 - Ø 39,99									
Ø 40,00 - Ø 42,00	36						M2,5x10 T8	SW 32	009.0006.F
Ø 42,01 - Ø 43,99									
Ø 44,00 - Ø 44,50	39	A3a	M5x9,5 T15	Size A3a 019.6562.N	M4x8 DIN7984			SW 34	009.0007.G
Ø 44,51 - Ø 46,00					M4x8 DIN912				
Ø 46,01 - Ø 46,99	43				M4x10 DIN912	Z1,5 <sup>3</sup>		SW 36	010.8030.N
Ø 47,00 - Ø 49,00									
Ø 49,01 - Ø 51,00									

See Page 7 for Cutting Inserts, Guide Pads and Screws/Wrench ordering data



## Solid Drilling Tool Type 1456

Boring range: Ø35,01 - 51,00 mm - STS drill tube connection

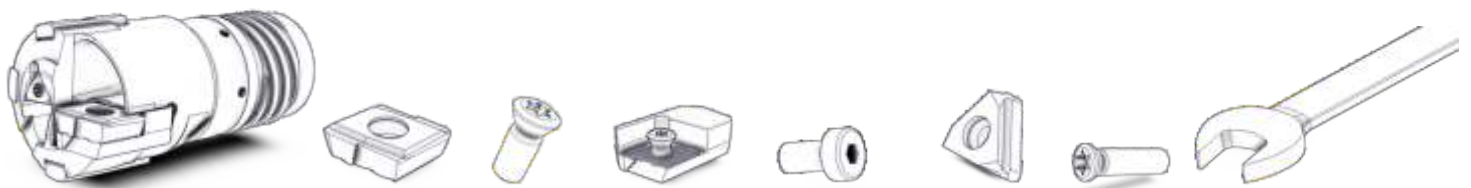
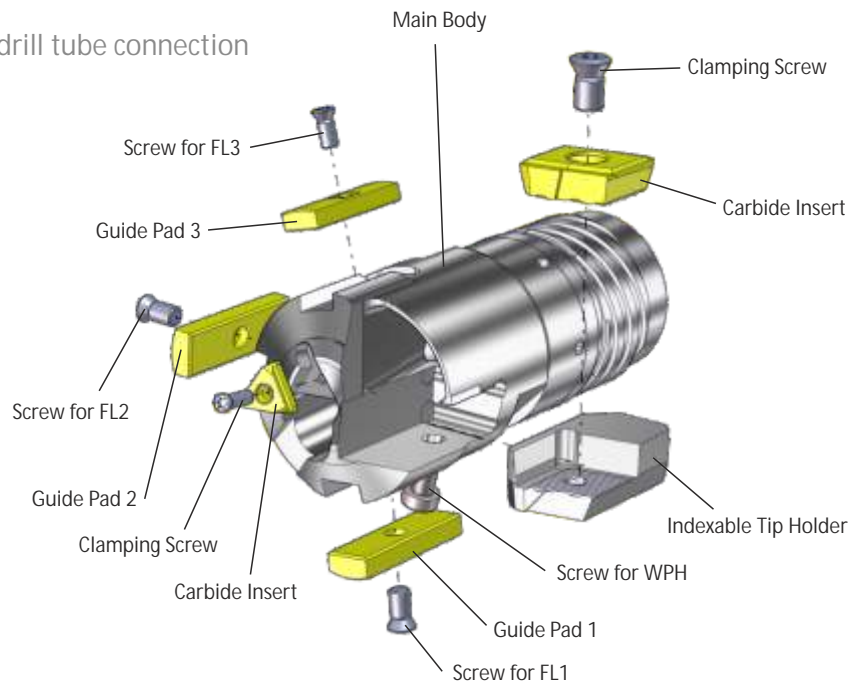


Boring Range	Drill Tube Connection	Peripheral Insert	Clamping Screw	Indexable Tip Holder	Screw for WPH	Centre Insert	Screw for Centre Insert	Wrench	
								Size	Ident-No.
Ø 35,01 - Ø 36,20	30	A2a	M4x8,2 T15	Size A2a	M3x6 DIN912			SW 27	010.8929.H
Ø 36,21 - Ø 38,50	33			019.6558.J					
Ø 38,51 - Ø 39,60	36	A2,5a		Size A2,5a	M3x8 DIN912	Z1 <sup>3</sup>		SW 30	008.7638.F
Ø 39,61 - Ø 42,00				019.6560.L					
Ø 42,01 - Ø 43,00	39	A3a	M5x9,5 T15		M4x8 DIN7984		M2,5x10 T8	SW 32	009.0006.F
Ø 43,01 - Ø 44,50									
Ø 44,51 - Ø 46,00	43			Size A3a	M4x8 DIN912			SW 34	009.0007.G
Ø 46,01 - Ø 47,00				019.6562.N					
Ø 47,01 - Ø 49,00					M4x10 DIN912	Z1,5 <sup>3</sup>		SW 36	010.8030.N
Ø 49,01 - Ø 51,00									

See Page 7 for Cutting Inserts, Guide Pads and Screws ordering data

## Solid Drilling Tools Type 1458

Boring range: Ø35,01 - 51,00 mm - Ejector drill tube connection



Boring Range	Drill Tube Connection	Peripheral Insert	Clamping Screw	Indexable Tip Holder	Screw for WPH	Centre Insert	Screw for Centre Insert	Wrench	
								Size	Ident-No.
Ø 35,01 - Ø 36,20	33	A2a	M4x8,2 T15	Size A2a 019.6558.J	M3x6 DIN912			SW 27	010.8929.H
Ø 36,21 - Ø 38,50								SW 30	008.7638.F
Ø 38,51 - Ø 39,60	35,5	A2,5a		Size A2,5a 019.6560.L	M3x8 DIN912	Z1 <sup>3</sup>		SW 32	009.0006.F
Ø 39,61 - Ø 42,00								SW 36	010.8030.N
Ø 42,01 - Ø 43,00	39	A3a	M5x9,5 T15	Size A3a 019.6562.N	M4x8 DIN7984		M2,5x10 T8	SW 32	009.0006.F
Ø 43,01 - Ø 44,50					M4x8 DIN912			SW 36	010.8030.N
Ø 44,51 - Ø 46,00	42,5				M4x8 DIN912	Z1,5 <sup>3</sup>		SW 36	010.8030.N
Ø 46,01 - Ø 47,00								SW 41	009.0008.H
Ø 47,01 - Ø 49,00	46,5				M4x10 DIN912			SW 41	009.0008.H
Ø 49,01 - Ø 51,00									

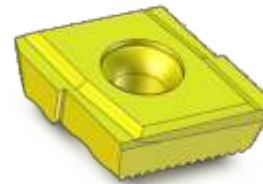
See Page 7 for Cutting Inserts, Guide Pads and Screws ordering data

## Spare and wear parts

For Solid Drilling Tools Type 1455 / 1456 / 1458

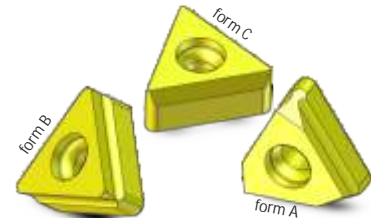
Indexable Inserts size A2a - A3a; Z1<sup>3</sup> - Z1,5<sup>3</sup>

Description	Chip Breakers	Carbide		
		P25 TiN	P40 TiN	K20 TiN
A2a	Size 1 - 2,2x0,5	018.9896.T	019.2603.P	019.2541.Z
	Size 2 - 2,5x0,7	019.2337.M	019.2607.T	019.2545.D
A2,5a	Size 1 - 2,2x0,6	019.5844.Q	019.6621.Z	019.6623.B
	Size 2 - 2,5x0,6	019.6620.Y	019.6622.A	019.6624.C
A3a	Size 1 - 2,5x0,7	018.9897.U	019.2604.Q	019.2542.A
	Size 2 - 2,7x0,8	019.2338.N	019.2608.U	019.2546.E



Chip breaker size 1 for unalloyed steels C > 0.2, alloyed steels, heat-treated steels, tool steel  
 Chip breaker size 2 for unalloyed steels C < 0.2, long chipping special purpose steel, stainless and acid-resistant steel

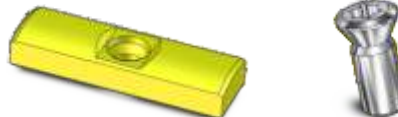
Description	Chip Breakers	Carbide		Cutting edges
		B TiN	H TiN	
Z1 <sup>3</sup>	2,1x0,5 / form A	019.2589.Z	018.9808.B	3
	2,1x0,5 / form B	019.6501.Z	019.6502.A	
	negative / form C	019.6503.B	019.6504.C	
Z1,5 <sup>3</sup>	2,5x0,8 / form A	019.6715.X	019.6574.A	
	2,5x0,8 / form B	019.6711.T	019.6712.U	
	negative / form C	019.6713.V	019.6714.W	



Carbide „B“ (hard) for structural steel  
 Carbide „H“ (tough) for alloyed and stainless steels

Additional chip breakers and coatings on request

## Guide Pads



Position	Description	Radius	Carbide		Screws for Guide Pads
			TiN coated	ML coated	
Guide Pad 1 and 2	FL 9	12,5	014.4758.E	019.6678.J	M4x8,2 T15
Guide Pad 3	FL 8	10	014.4757.G	019.6676.G	M3x7,4 T9

## Screws and Wrenches

Size	Length	Ident-No. Clamping Screw	Torx Size	Ident-No. Torx-Wrench
M2,5	10	010.8778.C	T8	010.8812.F
M3	7,4	008.1065.L	T9	008.1104.D
M4	8,2	008.1066.J	T15	008.7219.C
M5	9,5	014.4779.V		

Size	Length	Ident-No. Clamping Screw	SW Size	Ident-No. Hexagon Wrench
M3 / DIN 912	6	010.8525.J	SW 2,5	008.5836.M
	8	008.5106.C		
M4 / DIN 7984	8	008.7044.M	SW 3	008.6741.T
M4 / DIN 912	8	008.5108.X		
	10	008.5109.V		





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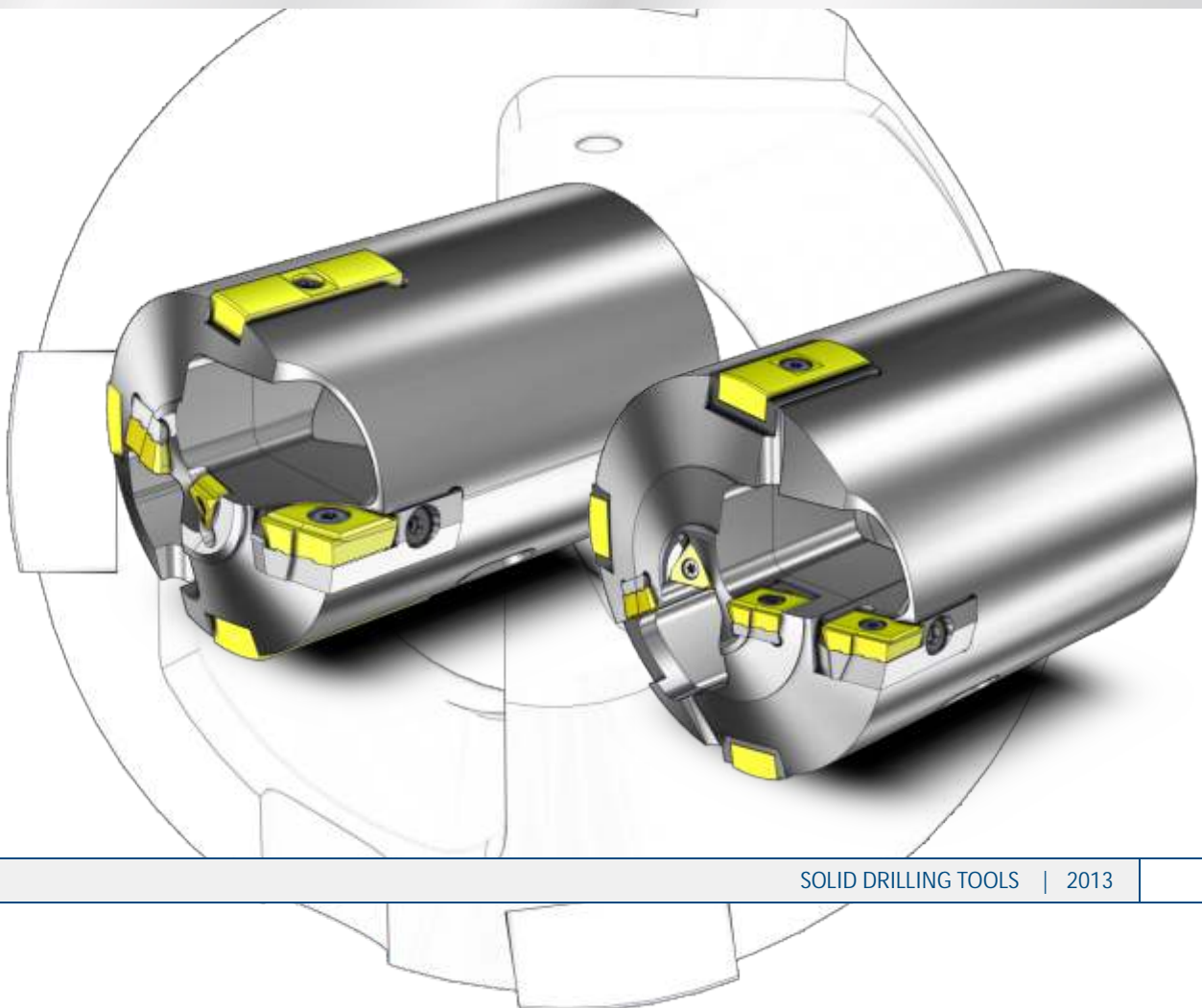
DEEP HOLE BORING TECHNOLOGY | EQUIPMENT

## Solid Drilling Tools

Type 1455 / 1456

DEEP HOLE DRILLING TOOLS

BORING RANGE Ø47,00 - 161,99 mm



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- 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 such as straightness, surface, material and even wall thickness.
- Equipment matched to the deep hole boring process - from workpiece clamping to vibration damping.
- Production-optimized machinery layout e.g. for reducing setup and conversion times.

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

- Surface  $R_a < 0.1 \mu\text{m}$  e.g. by skiving and roller burnishing
- Mismatch of axes  $< 0.1\text{mm/m}$  e.g. by pull counter boring
- Hole accuracy  $< IT8$  e.g. by skiving

Benefit from these advantages by cooperating with a strong partner.





## Contents

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Solid Drilling Tools Ø47,00 - 98,99 mm	4
Spare and wear parts	5
Solid Drilling Tools Ø99,00 - 161,99 mm	6

### Tool description

Solid drilling tool with three and more indexable inserts and three guide pads. The drill diameter is fixed.

Available as bta-tool and up to Ø90,0 as ejector-tool.

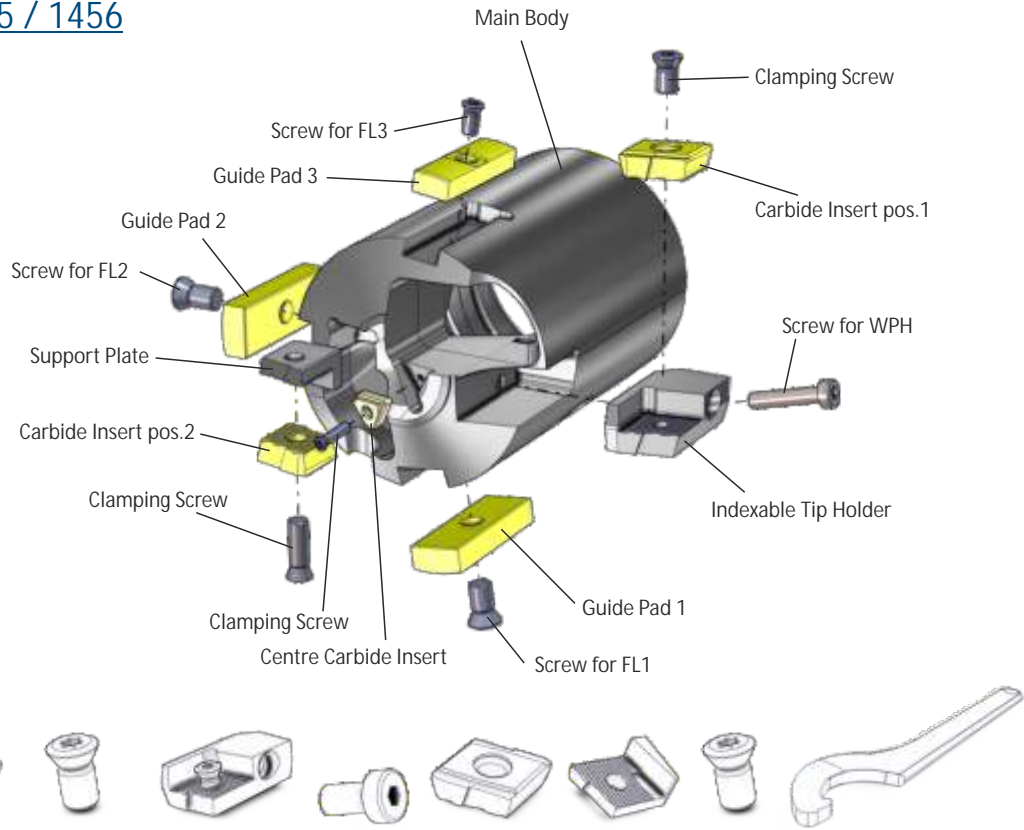
### Tool characteristics

- drilling depth 200 and more x tool diameter
- surface  $R_a$  1,25  $\mu$ m
- mismatch of axes 0,2 mm/m
- drilling accuracy IT9

## Solid Drilling Tools Type 1455 / 1456

Boring range Ø 47,00 - 98,99 mm

Possible drill tube connection:



Boring Range	Drill Tube Connection	Carbide Insert pos. 1	Clamping Screw	Indexable Tip Holder	Screw for WPH	Carbide Insert pos. 2	Support Plate	Clamping Screw	Hook Wrench
Ø 47,00 - Ø 51,99	43	A2a	M4x8,2 T15	Size A2a	M4x16 DIN 6912	A2a	Size A2a 019.2210.E	M4x12,5 T15	006.2286.B
Ø 52,00 - Ø 56,99	47			019.6558.J					006.2288.W
Ø 57,00 - Ø 60,99	51	A3a	M5x9,5 T15	Size A3a	M4x20 DIN 6912	A3a	Size A3a 019.2236.G	M5x16 T20	006.2290.L
Ø 61,00 - Ø 64,99	56			019.1749.Z					006.2292.G
Ø 65,00 - Ø 67,99	62			019.2270.S					006.2294.C
Ø 68,00 - Ø 72,99	68	A4a	M5x12 T15	Size A4a	M6x25 DIN 6912	A4a	Size A4a 019.2237.H		006.2296.X
Ø 73,00 - Ø 74,99	68			019.2270.S					
Ø 75,00 - Ø 80,99	75								
Ø 81,00 - Ø 90,99	82								
Ø 91,00 - Ø 98,99									

### Guide Pads



Position	Boring Range	Description	Radius	Carbide		Screws for Guide Pads
				TiN coated	ML coated	
Guide Pad 1 and 2	Ø 47,00 - Ø 51,99	FL 8	15	016.9217.B	019.6677.H	M3x7,4 T9
	Ø 52,00 - Ø 60,99	FL 10	20	016.9223.G	019.6679.K	M4x8,2 T15
	Ø 61,00 - Ø 67,99	FL 10	28	016.9226.A	019.6680.L	
Guide Pad 3	Ø 68,00 - Ø 98,99	FL 14	30	016.9229.T	019.6681.M	M6x12 T20
	Ø 47,00 - Ø 64,99	FL 8	15	016.9217.B	019.6677.H	M3x7,4 T9
	Ø 65,00 - Ø 98,99	FL 10	28	016.9226.A	019.6680.L	M4x8,2 T15

See Page 5 for Cutting Inserts and Screws/Wrenches ordering data

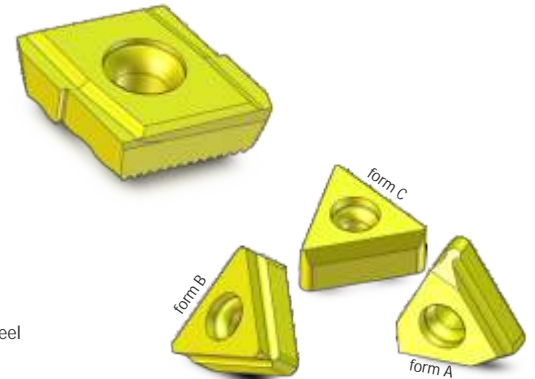


## Spare and wear parts

For Solid Drilling Tools Type 1455 / 1456

Indexable Inserts Size A2a - A5a; Z1<sup>3</sup> - Z2<sup>3</sup>

Description	Chip Breaker	Carbide		
		P25 TiN	P40 TiN	K20 TiN
A2a	Size 1 - 2,2x0,5	018.9896.T	019.2603.P	019.2541.Z
	Size 2 - 2,5x0,7	019.2337.M	019.2607.T	019.2545.D
A3a	Size 1 - 2,5x0,7	018.9897.U	019.2604.Q	019.2542.A
	Size 2 - 2,7x0,8	019.2338.N	019.2608.U	019.2546.E
A4a	Size 1 - 2,5x0,7	018.9898.V	019.2605.R	019.2543.B
	Size 2 - 2,7x0,8	019.2348.Y	019.2609.V	019.2547.F
A5a	Size 1 - 2,7x0,8	018.9899.W	019.2606.S	019.2544.C
	Size 2 - 3,0x1,0	019.2349.Z	019.2610.W	019.2548.G



Chip breaker size 1 for unalloyed steels C > 0.2, alloyed steels, heat- treated steels, tool steel  
Chip breaker size 2 for unalloyed steels C < 0.2, long chipping special purpose steel, stainless and acid- resistant steel

Boring Range	Description	Chip Breaker	Carbide		Cutting edges	Screws for Carbide Insert
			B TiN	H TiN		
Ø 47,00 - Ø 80,99	Z1 <sup>3</sup>	2,1x0,5 / form A	019.2589.Z	018.9808.B	3	M2,5x10 T8
		2,1x0,5 / form B	019.6501.Z	019.6502.A		
		negative / form C	019.6503.B	019.6504.C		
Ø 81,00 - Ø 161,99	Z2 <sup>3</sup>	2,5x0,8 / form A	019.2591.B	018.9811.E	6	M3,5x12 T15
		2,5x0,8 / form B	019.6497.V	019.6498.W		
		negative / form C	019.6499.X	019.6500.Y		

Carbide „B“ (hard) for structural steel  
Carbide „H“ (tough) for alloyed and stainless steels

Additional chip breakers and coatings on request

## Screws and Wrenches

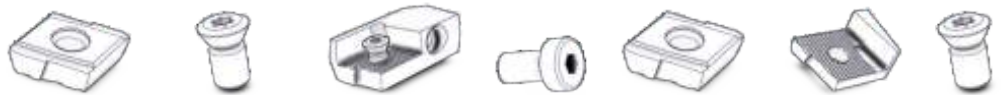
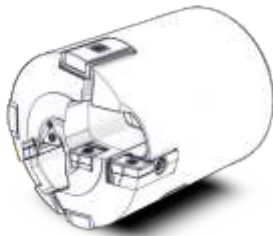
Size	Length	Ident-No. Clamping Screw	Torx Size	Ident-No. Torx-Wrench
M2,5	5	010.8405.U	T8	010.8812.F
	10	010.8778.C		
M3	5,1	014.4771.N	T9	008.1104.D
	5,8	014.4772.L		
	6,2	014.4773.J		
	7,4	008.1065.L		
	9	010.7674.V		
M3,5	12	010.8779.A	T15	008.7219.C
M4	8,2	008.1066.J		
	10	010.7499.M		
M5	12,5	010.8172.R		
	9,5	014.4779.V		
M6	16	008.1067.G	T20	008.7220.T
	12	008.5807.U		
M6	12	008.1068.E	T20	008.7220.T
	16	010.7708.F		



Size	Length	Ident-No. Clamping Screw	SW Size	Ident-No. Hexagon-Wrench
M4 / DIN 6912	16	008.5002.Q	SW 3	008.7213.Q
	20	008.5003.N		
M6 / DIN 6912	25	008.5023.G	SW 5	TN 36151
	30	008.5024.E		

## Solid Drilling Tools Type 1455 / 1456

Boring range: Ø 99,00 - 161,99 mm



Boring Range	Drill Tube Connection	Cutting Insert Pos. 1	Clamping Screw	Indexable Tip Holder	Screw for WPH	Cutting Insert Pos. 2	Support Plate	Clamping Screw
Ø 99,00 - Ø 101,99	94	A3a	M5x9,5 T15	Size A3a 019.1749.Z	M4x20 DIN 6912	A3a	Size A3a 019.2236.G	
Ø 102,00 - Ø 110,99								
Ø 111,00 - Ø 117,99	106	A4a	M5x12 T15	Size A4a 019.2270.S	M6x25 DIN 6912	A4a	Size A4a 019.2237.H	M5x16 T15
Ø 118,00 - Ø 122,99								
Ø 123,00 - Ø 125,99	118							
Ø 126,00 - Ø 134,99								
Ø 135,00 - Ø 143,99	130	A5a	M6x12 T20	Size A5a 019.2251.X	M6x30 DIN 6912	A5a	Size A5a 019.2246.S	M6x16 T20
Ø 144,00 - Ø 148,99								
Ø 149,00 - Ø 153,99	142							
Ø 154,00 - Ø 161,99								

Additional diameters on request

### Guide Pads



Boring Range	Description	Radius	Carbide		Shoe for Guide Pads	Screws for Guide Pads
			TiN coated	ML coated		
Ø 99,00 - Ø 110,99	FL 14	30	016.9229.T	019.6681.M	-	M6x12 T20
Ø 111,00 - Ø 143,99	FL 18	40	014.4761.R	019.6682.N	015.2246.N	M6x16 T20
Ø 144,00 - Ø 161,99		65	016.9238.S	019.6683.P		

See Page 5 for Cutting Inserts and Screws/Wrenches ordering data

Possible drill tube connection:



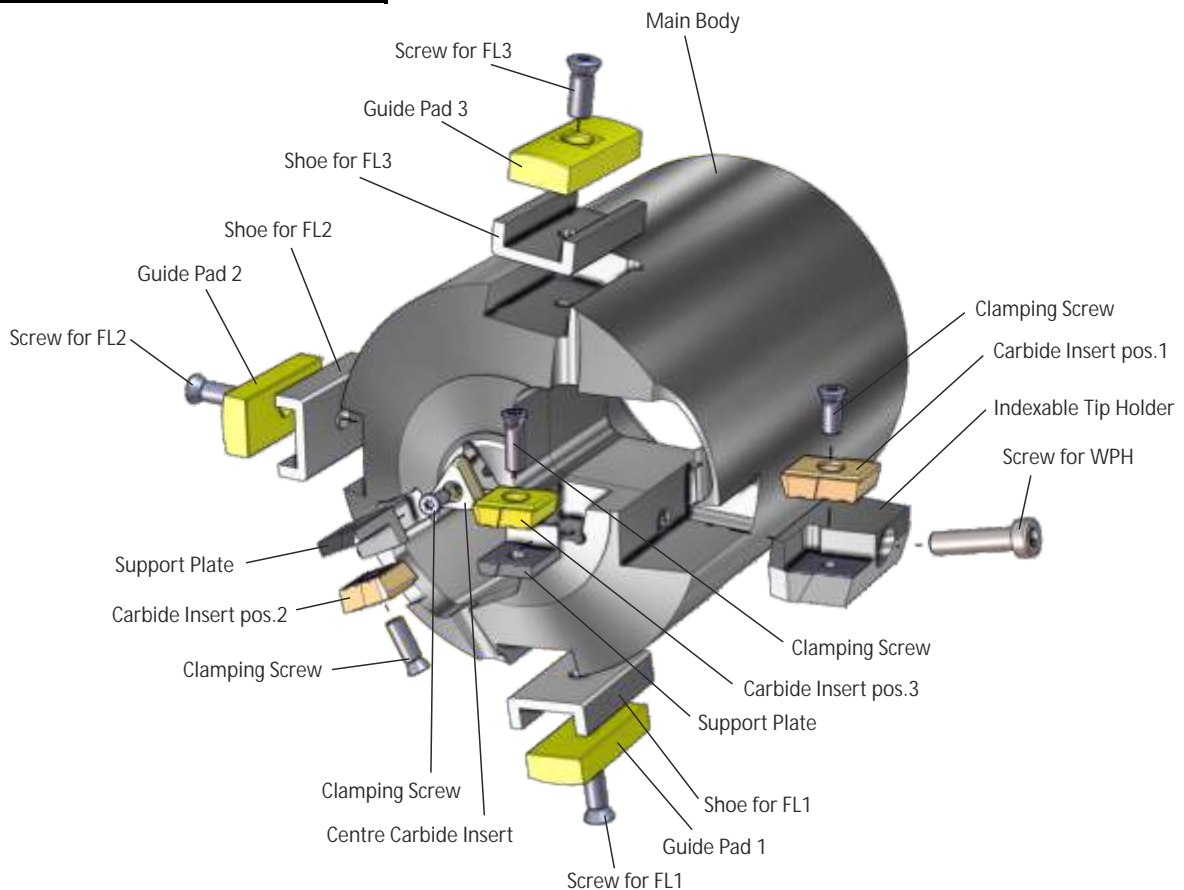
BTA-Thread  
Type 1455



STS-Thread  
Type 1456



Cutting Insert Pos.3	Support Plate	Clamping Screw	Hook Wrench
A2a	Size A2a 019.2210.E	M4x12,5 T15	006.2296.X
A3a	Size A3a 019.2236.G	M5x16 T20	006.2298.T
A4a	Size A4a 019.2237.H		006.2300.L
A5a	Size A5a 019.2246.S	M6x16 T20	006.2302.G
			006.2304.C





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Our program:







**TiefbohrSysteme<sup>®</sup>** GmbH

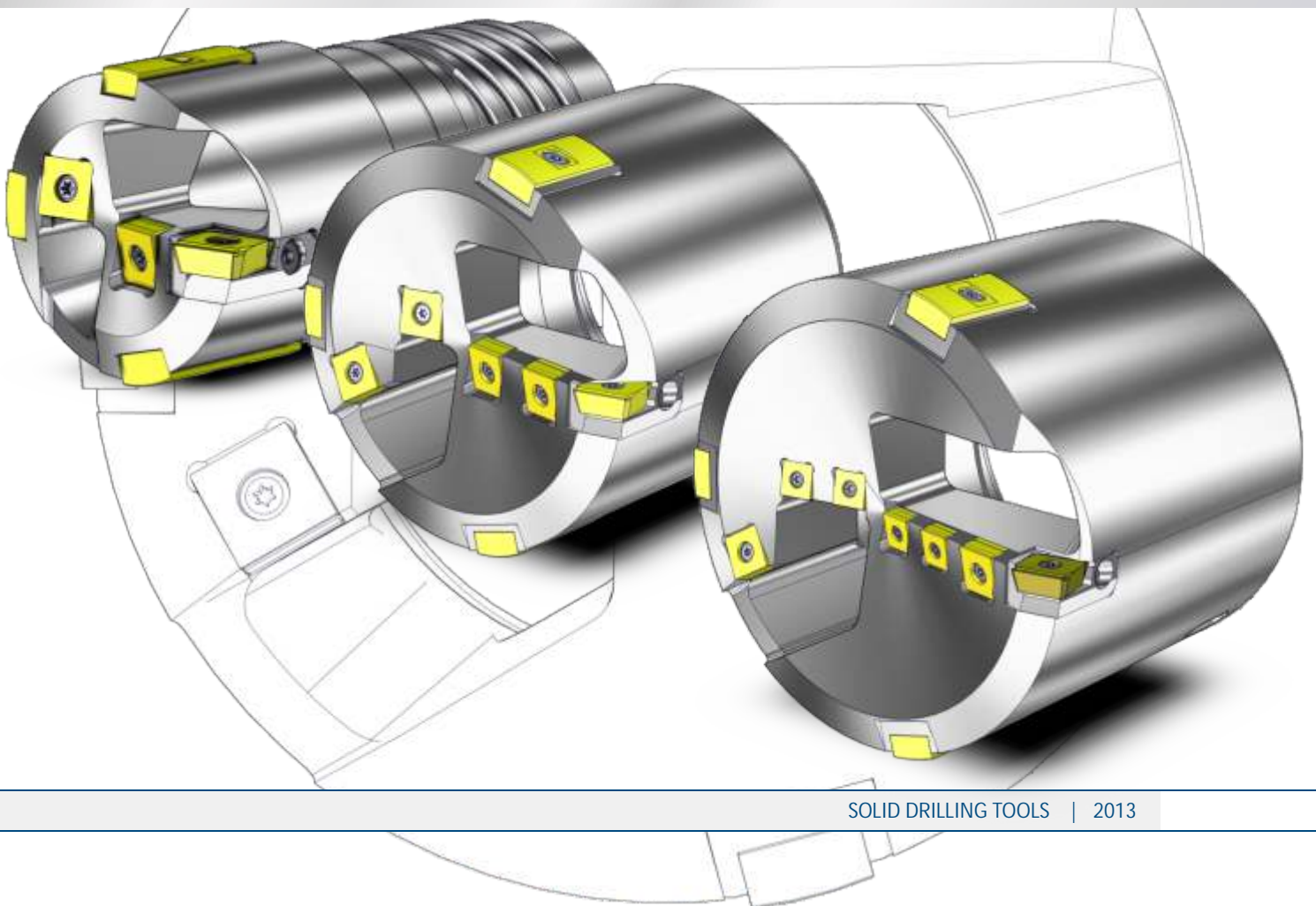
DEEP HOLE BORING TECHNOLOGY | EQUIPMENT

## Solid Drilling Tools TAN

Type 1450 / 1451

DEEP HOLE DRILLING TOOLS

BORING RANGE Ø47,00 - 144,99 mm



## Properties of BTA Deep Hole Boring Tools

### 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 these two factors. In the field of deep hole boring our company, BTA-Tiefbohrsysteme GmbH, is an 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 to tool service. All this is aimed at your success.

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, 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 such as straightness, surface, material and even wall thickness.
- Equipment matched to the deep hole boring process - from workpiece clamping to vibration damping.
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Here are a few results from production boring with our tools:

- Surface  $R_a < 0.1 \mu\text{m}$  e.g. by skiving and roller burnishing
- Mismatch of axes  $< 0.1\text{mm/m}$  e.g. by pull counter boring
- Hole accuracy  $< IT8$  e.g. by skiving

Benefit from these advantages by cooperating with a strong partner.





## Contents

Contents	3
Solid Drilling Tools Ø47,00 - 88,99 mm	4
Solid Drilling Tools Ø89,00 - 144,99 mm	5
Spare and wear parts	6

### Tool description

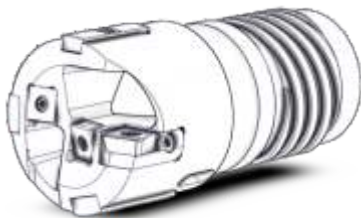
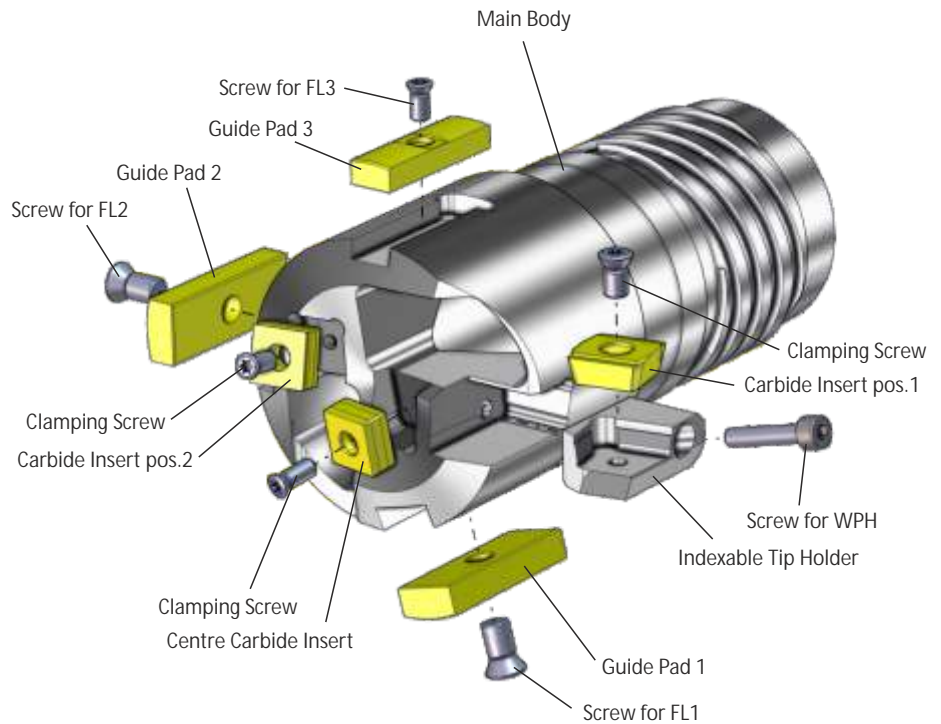
Solid Drilling Tools with tangential arranged inserts (three and more). The drill diameter is fixed. Especially suitable for machining stainless steels. Equipped with three guide pads. Available as bta-tool and up to Ø90,0 as ejector-tool.

### Tool characteristics

- drilling depth 200 and more x tool diameter
- surface  $R_a$  1,25  $\mu$ m
- mismatch of axes 0,2 mm/m
- drilling accuracy IT9

## Solid Drilling Tools Type 1450 / 1451

Boring range Ø 47,00 - 88,99 mm



Boring Range	Drill Tube Connection	Carbide Insert	Indexable Tip Holder	Carbide Insert Pos. 2	Centre Carbide Insert	Guide Pad FL1 and FL2	Guide Pad FL3
Ø 47,00 - Ø 51,99	43	A 2.2	A 2.2	Z 1-P	Z 1-N	FL 10	FL 8
Ø 52,00 - Ø 56,99	47						
Ø 57,00 - Ø 60,99	51	A 3	A 3	Z 2-P	Z 1-N	FL 14	FL 10
Ø 61,00 - Ø 64,99	56						
Ø 65,00 - Ø 67,99							
Ø 68,00 - Ø 70,99	62	A 4	A 4	Z 3-P	Z 2-N	FL 14	FL 14
Ø 71,00 - Ø 74,99	68						
Ø 75,00 - Ø 80,99							
Ø 81,00 - Ø 88,99	75				Z 3-N		

See Page 6/7 for spare and wear parts ordering data

Possible drill tube connection:



BTA-Thread  
Type 1450

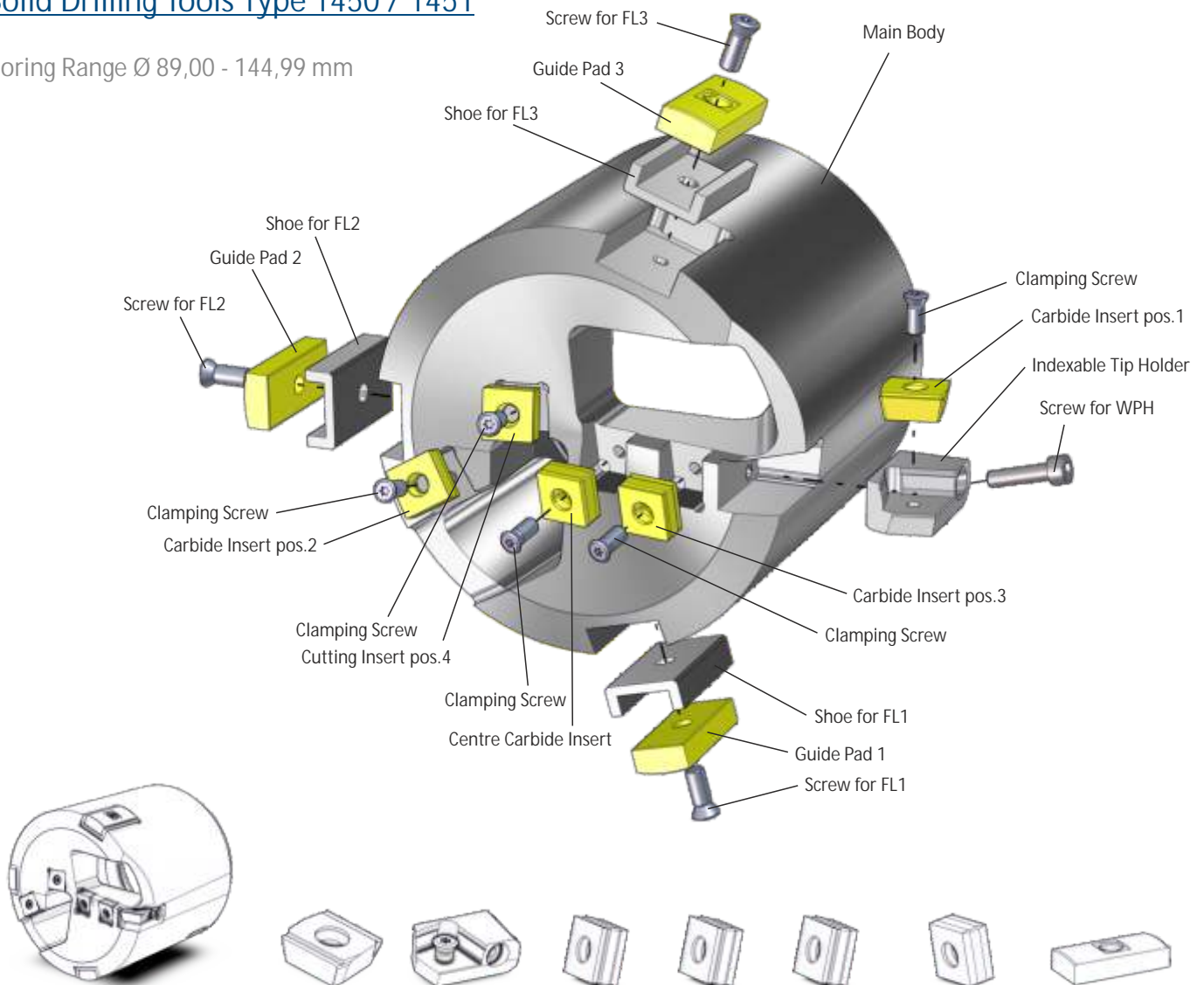


STS-Thread  
Type 1451



## Solid Drilling Tools Type 1450 / 1451

Boring Range Ø 89,00 - 144,99 mm



Boring Range	Drill Tube Connection	Carbide Insert	Indexable Tip Holder	Carbide Insert	Carbide Insert	Cutting Insert	Centre Carbide Insert	Guide Pad FL1, FL2 und FL3
Ø 89,00 - Ø 90,99	75			Z 2-P	Z 1-P	Z 1-P	Z 1-N	FL 14
Ø 91,00 - Ø 98,99	82	A 3	A 3	Z 2-P	Z 2-P	Z 2-P	Z 2-N	
Ø 99,00 - Ø 110,99	94							
Ø 111,00 - Ø 122,99	106			Z 3-P	Z 3-P	Z 3-P	Z 3-N	FL 14
Ø 123,00 - Ø 134,99	118	A 4	A 4					
Ø 135,00 - Ø 144,99	130							

Additional diameters on request

See Page 6/7 for spare and wear parts ordering data

Possible drill tube connection:



BTA-Thread  
Type 1450



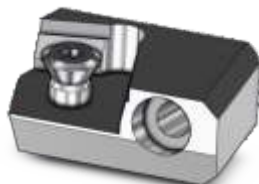
STS-Thread  
Type 1451

## Spare and wear parts

For Solid Drilling Tools Type 1450 / 1451

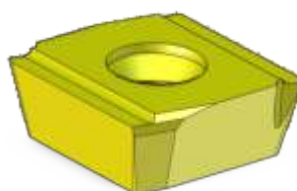
### Indexable Tip Holder

Size	Ident-No. Indexable Tip	Ident-No. Clamping Screw
A 2.2	018.0310.H	M4x16 / DIN 912
A 3	013.9006.K	M4x20 / DIN 912
A 4	013.9008.F	M5x20 / DIN 912



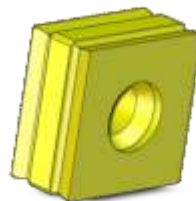
### Indexable Tip Holder pos. 1

Size	Carbide		Ident-No. Clamping Screw
	P 25 TiN	K 20 TiN	
A 2.2	018.0304.B	018.0305.C	M4x8,2 T15
A 3	013.9133.C	013.9135.X	M5x9,5 T15
A 4	013.9143.Z	013.9142.B	M5x12 T15



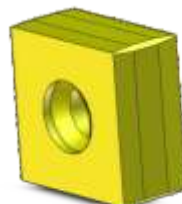
### Carbide Insert pos. 2 - pos. 4

Size	Carbide		Ident-No. Clamping Screw
	P 25 TiN	K 20 TiN	
Z 1-P	013.9013.N	013.9015.J	M3x9 T9
Z 2-P	013.9023.K	013.9025.F	M4x10 T15
Z 3-P	013.9033.G	013.9035.C	M5x12 T15



### Centre Carbide Insert

Size	Carbide		Ident-No. Clamping Screw
	P 25 TiN	K 20 TiN	
Z 1-N	013.9043.D	013.9045.Z	M3x9 T9
Z 2-N	013.9053.A	013.9055.V	M4x10 T15
Z 3-N	013.9063.W	013.9065.S	M5x12 T15



### Guide Pads



Position	Boring Range	Description	Radius	Carbide		Shoe for Guide Pads	Screws for Guide Pads
				TiN coated	ML coated		
Guide Pad 1 and 2	Ø 47,00 - Ø 60,99	FL 10	20	016.9223.G	019.6679.K	-	M4x8,2 T15
	Ø 61,00 - Ø 67,99	FL 10	28	016.9226.A	019.6680.L		M6x12 T20
	Ø 68,00 - Ø 110,99	FL 14	30	016.9229.T	019.6681.M	015.2246.N	M6x16 T20
	Ø 111,00 - Ø 144,99	FL 18	40	014.4761.R	019.6682.N		M6x16 T20
Guide Pad 3	Ø 47,00 - Ø 56,99	FL 8	15	016.9217.B	019.6677.H	-	M3x7,4 T9
	Ø 57,00 - Ø 67,99	FL 10	20	016.9223.G	019.6679.K		M4x8,2 T15
	Ø 68,00 - Ø 110,99	FL 14	30	016.9229.T	019.6681.M	015.2246.N	M6x12 T20
	Ø 111,00 - Ø 144,99	FL 18	40	014.4761.R	019.6682.N		M6x16 T20



## Spare and wear parts

For Solid Drilling Tools Type 1450 / 1451

### Torx-Screws und Wrenches

Size	Length	Ident-No. Clamping Screw	Torx Size	Ident-No. Torx-Wrench
M2,5	5	010.8405.U	T8	010.8812.F
	10	010.8778.C		
M3	5,1	014.4771.N	T9	008.1104.D
	5,8	014.4772.L		
	6,2	014.4773.J		
	7,4	008.1065.L		
	9	010.7674.V		
M3,5	12	010.8779.A	T15	008.7219.C
	8,2	008.1066.J		
M4	10	010.7499.M	T15	008.7219.C
	12,5	010.8172.R		
M5	9,5	014.4779.V	T15	008.7219.C
	12	008.1067.G		
M6	16	008.5807.U	T20	008.7220.T
	12	008.1068.E		
	16	010.7708.F		



### Socket Head Cap Screws and Wrenches

Size	Length	Ident-No. Clamping Screw	SW Size	Ident-No. Hexagon Wrench
M4	16	008.5111.K	SW 3	008.6741.T
	20	008.8112.H		
M5	20	008.5117.W	SW 4	008.5837.K





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Our program:







**TiefbohrSysteme**<sup>®</sup> GmbH

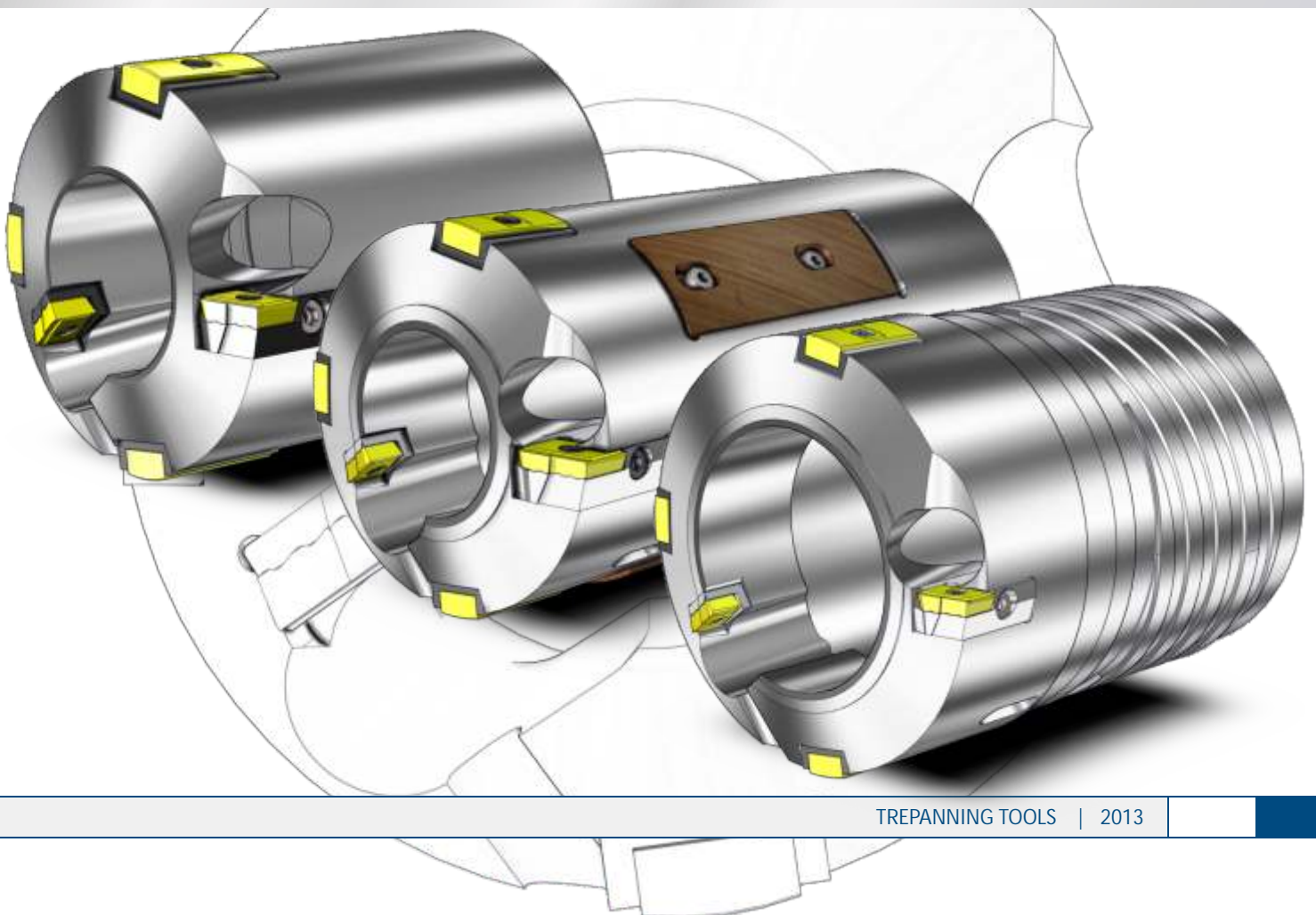
DEEP HOLE BORING TECHNOLOGY | EQUIPMENT

## Trepanning Tools

Type 1030 / 1032

DEEP HOLE DRILLING TOOLS

BORING RANGE Ø57,00 - 305,99 mm



## Properties of BTA Deep Hole Boring Tools

### 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 these two factors. In the field of deep hole boring our company, BTA-Tiefbohrsysteme GmbH, is an 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 to tool service. All this is aimed at your success.

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, 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 such as straightness, surface, material and even wall thickness.
- Equipment matched to the deep hole boring process - from workpiece clamping to vibration damping.
- Production-optimized machinery layout e.g. for reducing setup and conversion times.

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

- Surface  $R_a < 0.1 \mu\text{m}$  e.g. by skiving and roller burnishing
- Mismatch of axes  $< 0.1\text{mm/m}$  e.g. by pull counter boring
- Hole accuracy  $< IT8$  e.g. by skiving

Benefit from these advantages by cooperating with a strong partner.





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Trepanning Tools Type 1032	6
Spare and wear parts Teil 2	7

### Tool description

Trepanning tools to reduce the machine performance when processing a solid-bore. The remaining core can be further used.  
The version with the fibre pads is particularly suitable for the machining of long holes.

### Tool characteristics

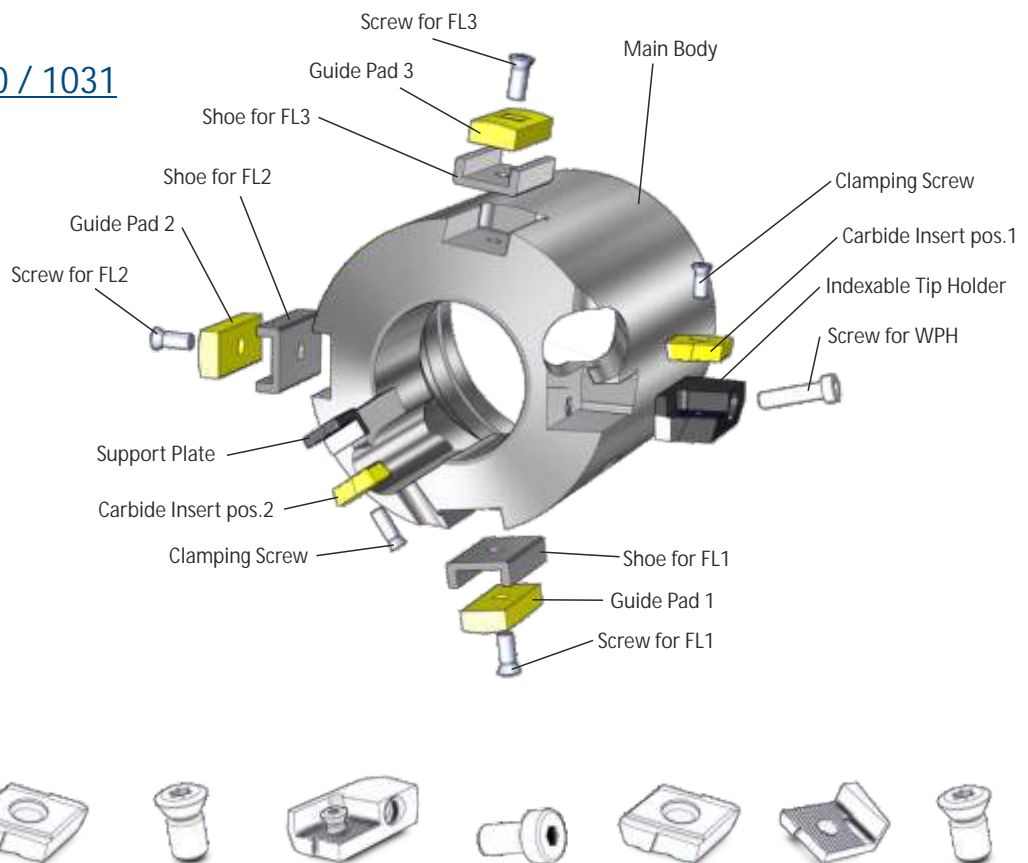
- drilling depth 300 x tool diameter
- surface  $R_a$  1,25  $\mu$ m
- mismatch of axes 0,2 mm/m
- drilling accuracy IT9

## Trepanning Tools Type 1030 / 1031

Boring Range Ø 57,00 - 305,99 mm

Type 1030, standard design BTA

Type 1031, design with fibre pads  
For difficult boring operations we recommend to use fibre pads to reduce any vibrations that may occur.



Boring Range	Drill Tube Connection	Carbide Insert pos.1	Clamping Screw	Indexable Tip Holder	Screw for WPH	Carbide Insert pos.2	Support Plate	Clamping Screw
Ø 57,00 - Ø 60,99	51			Size A2a 019.2214.J	M4x16 DIN6912	A2a	Size A2a 019.2210.E	M4x12,5 T15
Ø 61,00 - Ø 67,99	56	A2a	M4x8,2 T15					
Ø 68,00 - Ø 74,99	62							
Ø 75,00 - Ø 80,99	68							
Ø 81,00 - Ø 90,99	75	A3a	M5x9,5 T15	Size A3a 019.2222.S	M4x20 DIN6912	A3a	Size A3a 019.2236.G	
Ø 91,00 - Ø 98,99	82							
Ø 99,00 - Ø 110,99	94							
Ø 111,00 - Ø 122,99	106	A4a	M5x12 T15	Size A4a 019.2270.S	M6x25 DIN6912	A4a	Size A4a 019.2237.H	M5x16 T20
Ø 123,00 - Ø 134,99	118							
Ø 135,00 - Ø 148,99	130							
Ø 149,00 - Ø 161,99	142							
Ø 162,00 - Ø 173,99	154							
Ø 174,00 - Ø 185,99	166							
Ø 186,00 - Ø 197,99	178							
Ø 198,00 - Ø 209,99	190							
Ø 210,00 - Ø 221,99	202	A5a	M6x12 T20	Size A5a 019.2251.X	M6x30 DIN6912	A5a	Size A5a 019.2246.S	M6x16 T20
Ø 222,00 - Ø 233,99	214							
Ø 234,00 - Ø 245,99	226							
Ø 246,00 - Ø 257,99	238							
Ø 258,00 - Ø 269,99	250							
Ø 270,00 - Ø 281,99	262							
Ø 282,00 - Ø 293,99	274							
Ø 294,00 - Ø 305,99	286							

Additional diameters on request

See Page 5/7 for spare and wear parts ordering data

Tools for drill tube Ø226 or larger can be delivered with flange connection



## Spare and wear parts

### Guide Pads



Description	Radius	Carbide		Shoe for Guide Pads
		TIN coated	ML coated	
FL 8	15	016.9217.B	019.6677.H	-
FL 10	28	016.9226.A	019.6680.L	
FL 14	30	016.9229.T	019.6681.M	
FL 18	40	014.4761.R	019.6682.N	015.2246.N
	65	016.9238.S	019.6683.P	
	90	019.2768.L	019.6684.Q	



### Fibre Pads RF 82 to RF 90



Description	Ident-No. Fibre	Washer	Screws for Fibre Pads
RF 82	018.4000.B		M4x8 DIN7984
RF 83	018.4001.C	011.2044.C	M4x10 DIN7984
RF 84	018.4002.D		M4x12 DIN6912
RF 85	018.4003.E		
RF 86	018.4004.F	011.2043.E	M6x16 DIN6912
RF 87	018.4005.G		
RF 88	018.4006.H		
RF 89	011.9935.B	011.2042.G	M10x16 DIN7984
RF 90	011.9936.Z		

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: 3 pieces per tool.

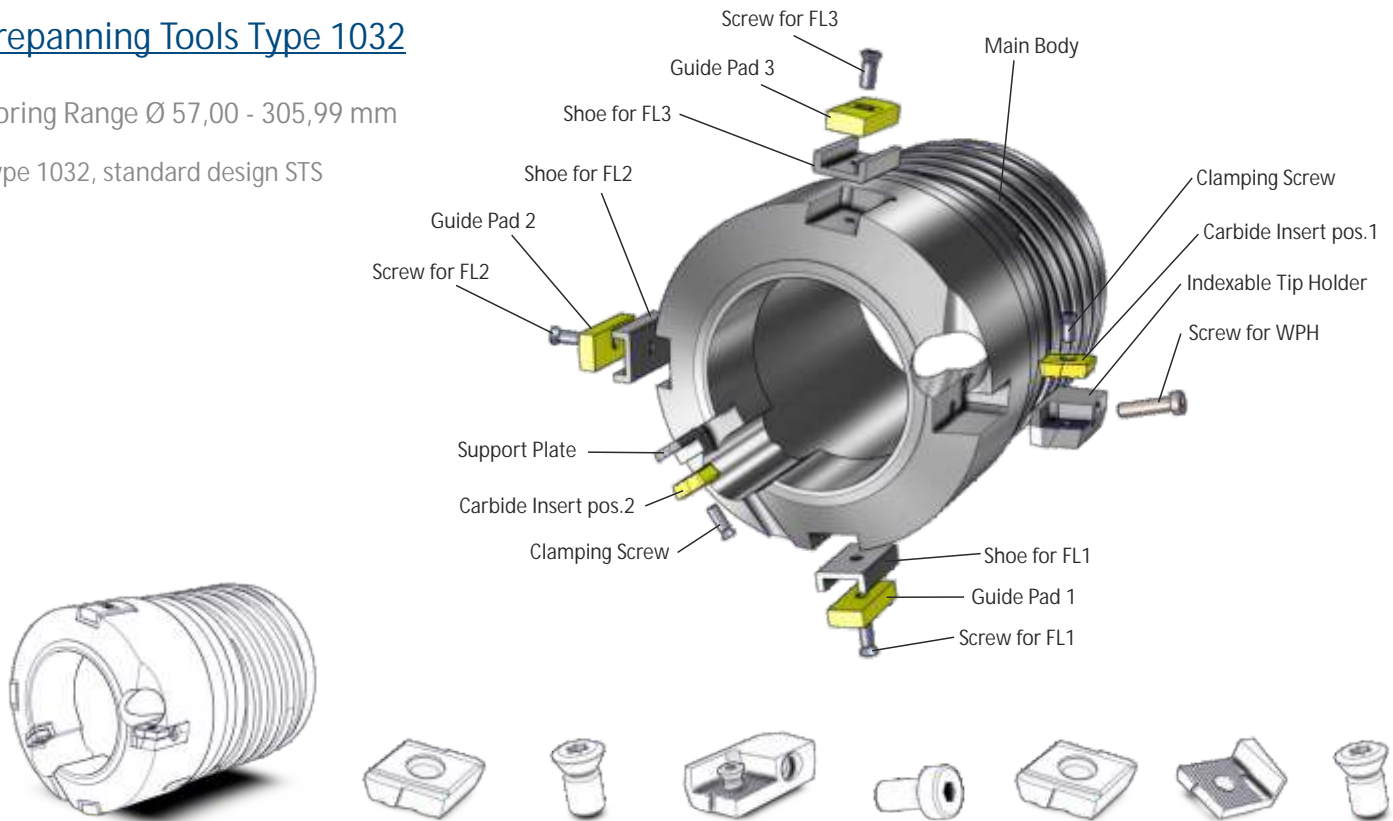


Guide Pads FL1 and FL2	Clamping Screw	Guide Pad FL3	Clamping Screw	Fibre Pad	Core Ø (selectable)
FL 10 R 28	M4x8,2 T15	FL 8 R 15	M3x7,4 T9	RF 83	17 - 22 24 - 26 31
FL 14 / R30	M6x12 T20	FL 10 R 28	M4x8,2 T15	RF 84	29 - 31 31 - 37 39 - 40
FL 18 R 40		FL 14 / R 30	M6x12 T20	RF 85	35 - 40 47 - 50 59 - 60
FL 18 / R 65		FL 18 R 40		RF 86	63 - 67 76 - 79
FL 18 / R 90	M6x16 T20	FL 18 / R 65	M6x16 T20	RF 87	88 - 89 90 - 99 102 - 111
		FL 18 / R 90		RF 88	114 - 121 126 - 133 138 - 145
				RF 89	150 - 157 162 - 169 174 - 181 186 - 193 198 - 205 210 - 217

## Trepanning Tools Type 1032

Boring Range Ø 57,00 - 305,99 mm

Type 1032, standard design STS



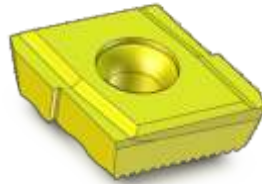
Boring Range	Drill Tube Connection	Carbide Insert	Clamping Screw	Indexable Tip Holder	Screw for WPH	Carbide Insert pos.2	Support Plate	Clamping Screw
Ø 57,00 - Ø 60,99	51							
Ø 60,00 - Ø 67,99	56	A2a	M4x8,2 T15	Size A2a 019.2214.J	M4x16 DIN6912	A2a	Size A2a 019.2210.E	M4x12,5 T15
Ø 66,00 - Ø 74,99	62							
Ø 72,00 - Ø 80,99	68							
Ø 80,00 - Ø 90,99	75	A3a	M5x9,5 T15	Size A3a 019.2222.S	M4x20 DIN6912	A3a	Size A3a 019.2236.G	
Ø 87,00 - Ø 98,99	82							
Ø 99,00 - Ø 110,99	94							
Ø 111,00 - Ø 122,99	106	A4a	M5x12 T15	Size A4a 019.2270.S	M6x25 DIN6912	A4a	Size A4a 019.2237.H	M5x16 T20
Ø 123,00 - Ø 134,99	118							
Ø 135,00 - Ø 148,99	130							
Ø 147,00 - Ø 161,99	142							
Ø 159,00 - Ø 173,99	154							
Ø 171,00 - Ø 185,99	166							
Ø 183,00 - Ø 197,99	178							
Ø 195,00 - Ø 209,99	190							
Ø 207,00 - Ø 221,99	202	A5a	M6x12 T20	Size A5a 019.2251.X	M6x30 DIN6912	A5a	Size A5a 019.2246.S	M6x16 T20
Ø 219,00 - Ø 233,99	214							
Ø 232,00 - Ø 245,99	226							
Ø 244,00 - Ø 257,99	238							
Ø 256,00 - Ø 269,99	250							
Ø 268,00 - Ø 281,99	262							
Ø 280,00 - Ø 293,99	274							
Ø 292,00 - Ø 305,99	286							

Additional diameters on request

See Page 5/7 for spare and wear parts ordering data



## Spare and wear parts



Indexable Inserts Size A2a - A5a

Description	Chip Breaker	Carbide		
		P25 TiN	P40 TiN	K20 TiN
A2a	Size 1 - 2,2x0,5	018.9896.T	019.2603.P	019.2541.Z
	Size 2 - 2,5x0,7	019.2337.M	019.2607.T	019.2545.D
A3a	Size 1 - 2,5x0,7	018.9897.U	019.2604.Q	019.2542.A
	Size 2 - 2,7x0,8	019.2338.N	019.2608.U	019.2546.E
A4a	Size 1 - 2,5x0,7	018.9898.V	019.2605.R	019.2543.B
	Size 2 - 2,7x0,8	019.2348.Y	019.2609.V	019.2547.F
A5a	Size 1 - 2,7x0,8	018.9899.W	019.2606.S	019.2544.C
	Size 2 - 3,0x1,0	019.2349.Z	019.2610.W	019.2548.G

Chip breaker size 1 for unalloyed steels C > 0.2, alloyed steels, heat-treated steels, tool steel  
Chip breaker size 2 for unalloyed steels C < 0.2, long chipping special purpose steel, stainless and acid-resistant steel

Additional chip breakers and coatings on request



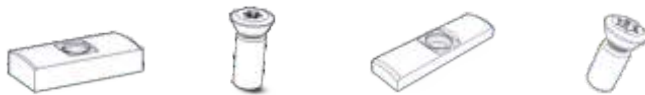
Torx-Screws

Size	Length	Ident-No. Clamping Screw	Torx Size	Ident-No. Torx-Screw
M3	7,4	008.1065.L	T9	008.1104.D
	8,2	008.1066.J		
M4	12,5	010.8172.R	T15	008.7219.C
	9,5	014.4779.V		
M5	12	008.1067.G	T20	008.7220.T
	16	008.5807.U		
M6	12	008.1068.E	T20	008.7220.T
	16	010.7708.F		



Socket Head Cap Screws

Size	Length	Ident-No. Clamping Screw	SW Size	Ident-No. Hexagon-Screw
M4 / DIN 7984	8	008.7044.M	SW 3	008.7213.Q
	10	008.5000.U		
M4 / DIN 6912	16	008.5002.Q	SW 3	008.7213.Q
	12	008.5001.S		
M6 / DIN 6912	20	008.5003.N	SW 5	008.6948.U
	16	008.5021.L		
M6 / DIN 6912	25	008.5023.G	SW 5	008.6948.U
	30	008.5024.E		
M10 / DIN 7984	16	008.5042.C	SW 8	008.7216.J



Guide Pads FL1 and FL2	Clamping Screw	Guide Pad FL3	Clamping Screw	Core Ø (selectable)
FL 10 R 28	M4x8,2 T15	FL 8 R 15	M3x7,4 T9	17 - 22
				24 - 26
				31
FL 14 / R30	M6x12 T20	FL 10 R 28	M4x8,2 T15	29 - 31
				39 - 40
		FL 14 / R 30	M6x12 T20	35 - 40
FL 18 R 40		FL 18 R 40		47 - 50
				59 - 60
				63 - 67
FL 18 / R 65		FL 18 / R 65		76 - 79
				88 - 89
				90 - 99
				102 - 111
	M6x16 T20		M6x16 T20	114 - 121
				126 - 133
				138 - 145
FL 18 / R 90		FL 18 / R 90		150 - 157
				162 - 169
				174 - 181
				186 - 193
				198 - 205
				210 - 217



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**TiefbohrSysteme**<sup>®</sup> GmbH

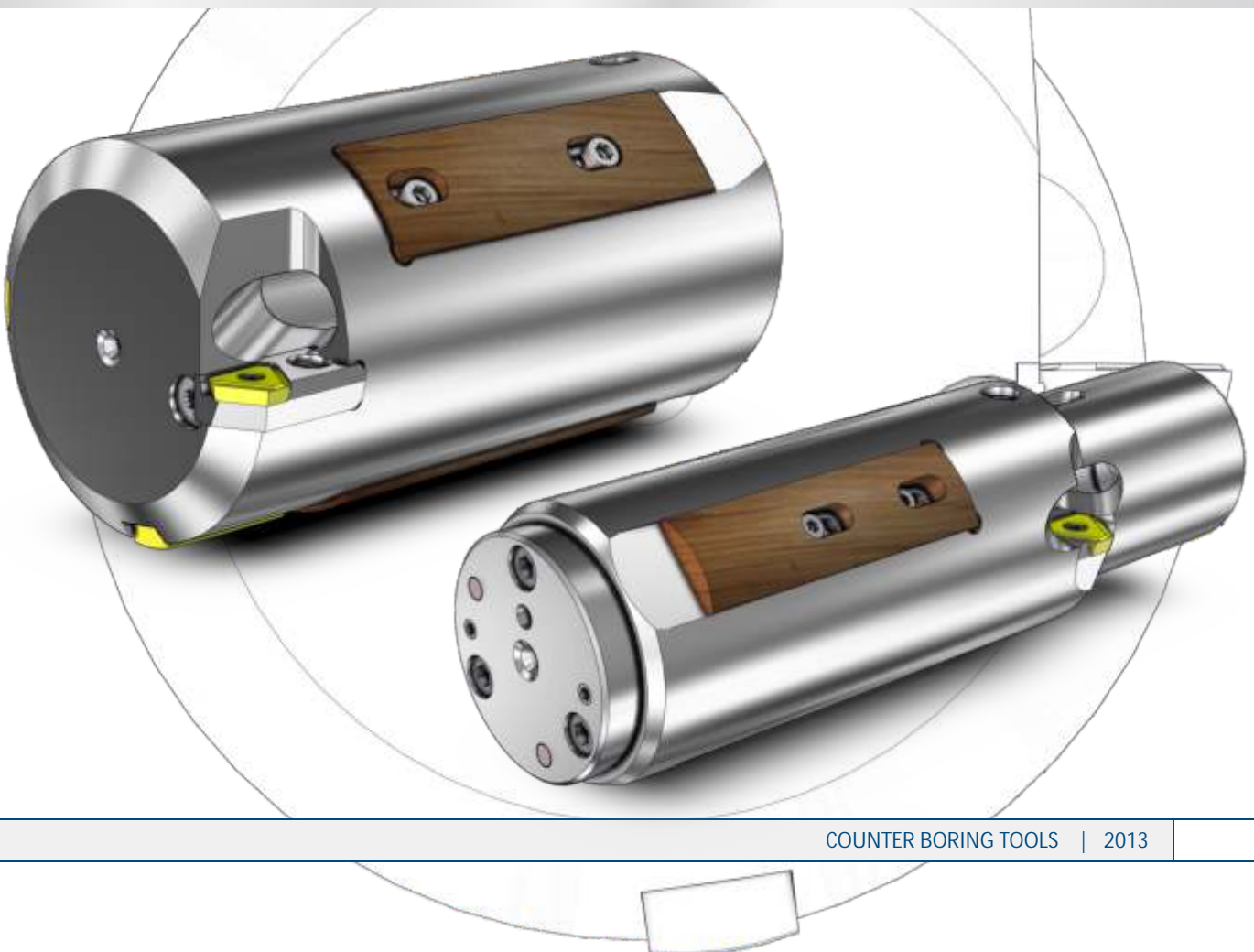
DEEP HOLE BORING TECHNOLOGY | EQUIPMENT

## Counter Boring Tools

Type 1137 / 1108

DEEP HOLE DRILLING TOOLS

BORING RANGE Ø 44,00 - 233,99 mm



## Properties of BTA Deep Hole Boring Tools

### 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 these two factors. In the field of deep hole boring our company, BTA-Tiefbohrsysteme GmbH, is an 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 to tool service. All this is aimed at your success.

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, 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 such as straightness, surface, material and even wall thickness.
- Equipment matched to the deep hole boring process - from workpiece clamping to vibration damping.
- Production-optimized machinery layout e.g. for reducing setup and conversion times.

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

- Surface  $R_a < 0.1 \mu\text{m}$  e.g. by skiving and roller burnishing
- Mismatch of axes  $< 0.1\text{mm/m}$  e.g. by pull counter boring
- Hole accuracy  $< IT8$  e.g. by skiving

Benefit from these advantages by cooperating with a strong partner.





## Contents

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### Tool description

Counter Boring Tools with fixed boring diameter. Type 1137 for pushed and type 1108 for pulled operation. Type 1108 especially suitable for boring which should have a low mismatch of axes.

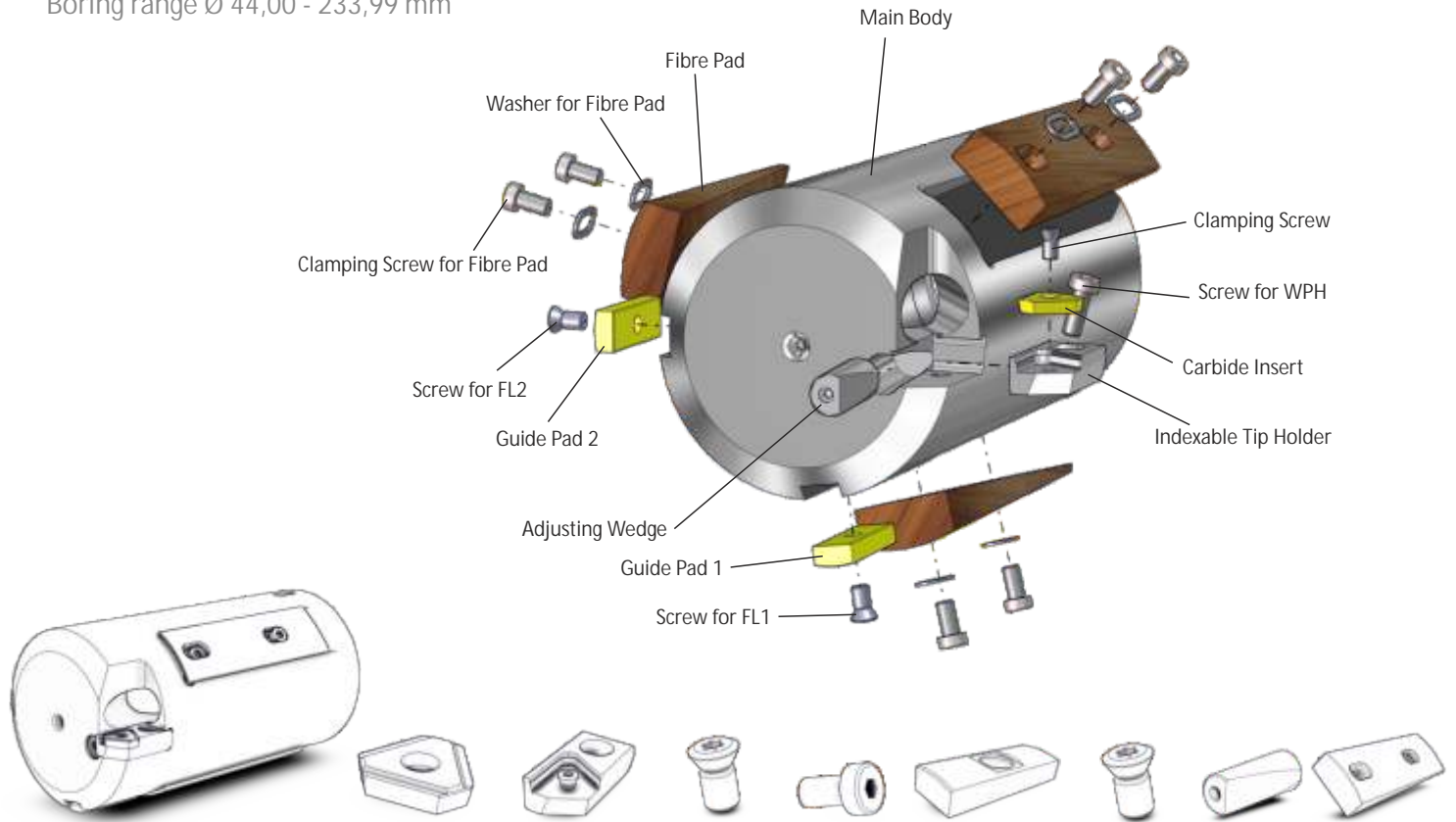
Lieferbar als BTA-Werkzeug.

### Tool characteristics

- drilling depth 400 x tool diameter
- surface  $R_a$  1,25  $\mu$ m
- mismatch of axes 0,05 mm/m
- drilling accuracy IT8

## Counter Boring Tools Type 1137 - „pushed“

Boring range Ø 44,00 - 233,99 mm



Boring Range	Drill Tube Connection	Carbide Insert pos.1	Indexable Tip Holder	Clamping Screw	Screw for WPH	Guide Pad FL1 and FL2	Clamping Screw	Adjustable Wedge	Fibre Pads
Ø 44,00 - Ø 46,99	36	AK 16 cutting depth: p 5 mm	A 14,5 016.4593.X	M4x7,5 T15	M4x10 DIN 7984	FL 10 / R20	M4x8,2 T15	14,5 017.0569.K	RF 82
Ø 47,00 - Ø 56,99	39					FL 10 / R28			RF 83
Ø 57,00 - Ø 60,99	43								
Ø 61,00 - Ø 67,99	47								
Ø 68,00 - Ø 74,99	51	AK 25 cutting depth: p 9 mm	A 21 016.4595.T	M5x10 T20	M6x16 DIN 6912	FL 14 / R30	M6x12 T20	28 016.9260.A	RF 84
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	AK 40 cutting depth: p 14 mm	A 28 016.4592.A	M6x14 T20	M8x20 DIN 6912	FL 18 / R40	M6x12 T20	40 017.0472.B	RF 85
Ø 135,00 - Ø 148,99	106					FL 18 / R65			RF 86
Ø 149,00 - Ø 161,99	118								
Ø 162,00 - Ø 173,99	130								
Ø 174,00 - Ø 176,99	142								
Ø 177,00 - Ø 185,99	154								
Ø 186,00 - Ø 209,99	166								
Ø 210,00 - Ø 221,99	178								
Ø 222,00 - Ø 233,99	190							RF 88	

Additional diameters on request

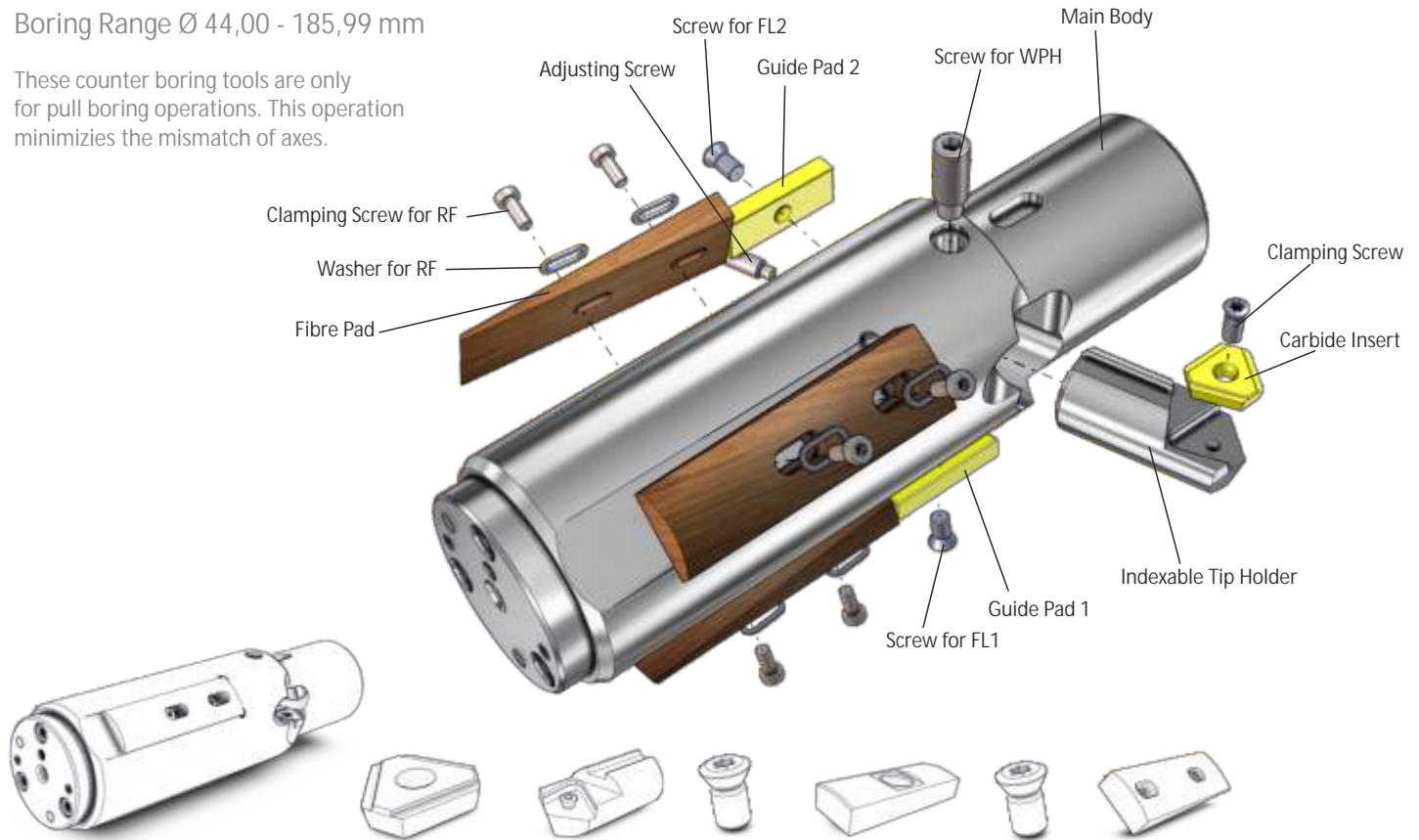
See Page 6/7 for spare and wear parts ordering data



## Counter Boring Tools Type 1108 - „pulled“

Boring Range Ø 44,00 - 185,99 mm

These counter boring tools are only for pull boring operations. This operation minimizes the mismatch of axes.



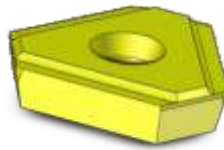
Boring Range	Drill Tube Connection	Carbide Insert pos. 1	Indexable Tip Holder	Clamping Screw	Guide Pad FL1 and FL2	Clamping Screw	Fibre Pads
Ø 44,00 - Ø 46,99	36	AKz 16 cutting depth: p 5 mm	A 14,5 016.4593.X	M4x7,5 T15	FL 10 / R 20	M4x8,2 T15	RF 82
Ø 47,00 - Ø 56,99	39				FL 10 / R 28		RF 83
Ø 57,00 - Ø 60,99	43						
Ø 61,00 - Ø 67,99	47						
Ø 68,00 - Ø 74,99	51	AKz 25 cutting depth: p 9 mm	A 21 016.4595.T	M5x10 T20	FL 14 / R 30	M6x12 T20	RF 84
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	AKz 40 cutting depth: p 14 mm	A 28 016.4592.A	M6x14 T20	FL 18 / R 40		RF 85
Ø 111,00 - Ø 122,99	82				FL 18 / R 65		RF 86
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					RF 87	
Ø 174,00 - Ø 185,99	142						

Additional diameters on request

See Page 6/7 for spare and wear parts ordering data

## Spare and wear parts

Indexable Inserts Size AK 16 - AK 40



Description	Chip Breaker	Carbide		
		P20 TiN	K20 TiN	K10
AK 16	Size 1 - 1,8x0,6	011.2840.B	018.7016.T	011.2802.K
AK 25	Size 1 - 2,1x0,6	011.2842.W	013.9684.M	011.2778.D
AK 40	Size 1 - 2,5x0,8	011.2844.S	013.9685.K	011.2779.B

Additional chip breakers and coatings on request

Indexable Inserts Size AKz 16 - AKz 40



Description	Chip Breaker	Carbide		
		P20 TiN	K20 TiN	K10
AKz 16	Gr.1 - 1,8x0,6	011.3663.R	018.3295.S	015.1863.S
AKz 25	Gr.1 - 2,1x0,6	011.3664.P	017.3364.N	011.3915.Q
AKz 40	Gr.1 - 2,5x0,8	011.3665.M	018.8265.U	014.2745.A

Additional chip breakers and coatings on request

Guide Pad 1 and 2



Description	Radius	Carbide		Shoes for Guide Pads	Screws for Shoes
		TiN coated	ML coated		
FL 10	20	016.9223.G	019.6679.K	-	-
	28	016.9226.A	019.6680.L		
FL 14	30	016.9229.T	019.6681.M	017.0631.H	008.5019.W
FL 18	40	014.4761.R	019.6682.N		
	65	016.9238.S	019.6683.P		



## Spare and wear parts

Fibre pads RF 82 to RF 90



Description	Ident-No. Fibre	Washer	Screws for Fibre Pad
RF 82	018.4000.B		M4x8 DIN7984
RF 83	018.4001.C	011.2044.C	M4x10 DIN7984
RF 84	018.4002.D		M4x12 DIN6912
RF 85	018.4003.E		
RF 86	018.4004.F	011.2043.E	M6x16 DIN6912
RF 87	018.4005.G		
RF 88	018.4006.H		
RF 89	011.9935.B	011.2042.G	M10x16 DIN7984
RF 90	011.9936.Z		

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: 3 pieces per tool.



### Torx-Screws

Size	Length	Ident-No. Clamping Screw	Torx Size	Ident-No. Torx-Wrench
M4	7,5	011.2416.Q	T15	008.7219.C
	8,2	008.1066.J		
M5	10	011.2061.C	T20	008.7220.T
	12	011.2060.E		
M6	12	008.1068.E		
	14	016.4592.A		



### Socket Head Cap Screw

Size	Length	Ident-No. Clamping Screw	SW Size	Ident-No. Hexagon Wrench
M4 / DIN 7984	10	008.5000.U	SW 3	008.7213.Q
M6 / DIN 6912	16	008.5021.L	SW 5	008.6948.U
M8 / DIN 6912	20	008.5031.H	SW 6	008.5839.F





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Our program:







**TiefbohrSysteme**<sup>®</sup> GmbH

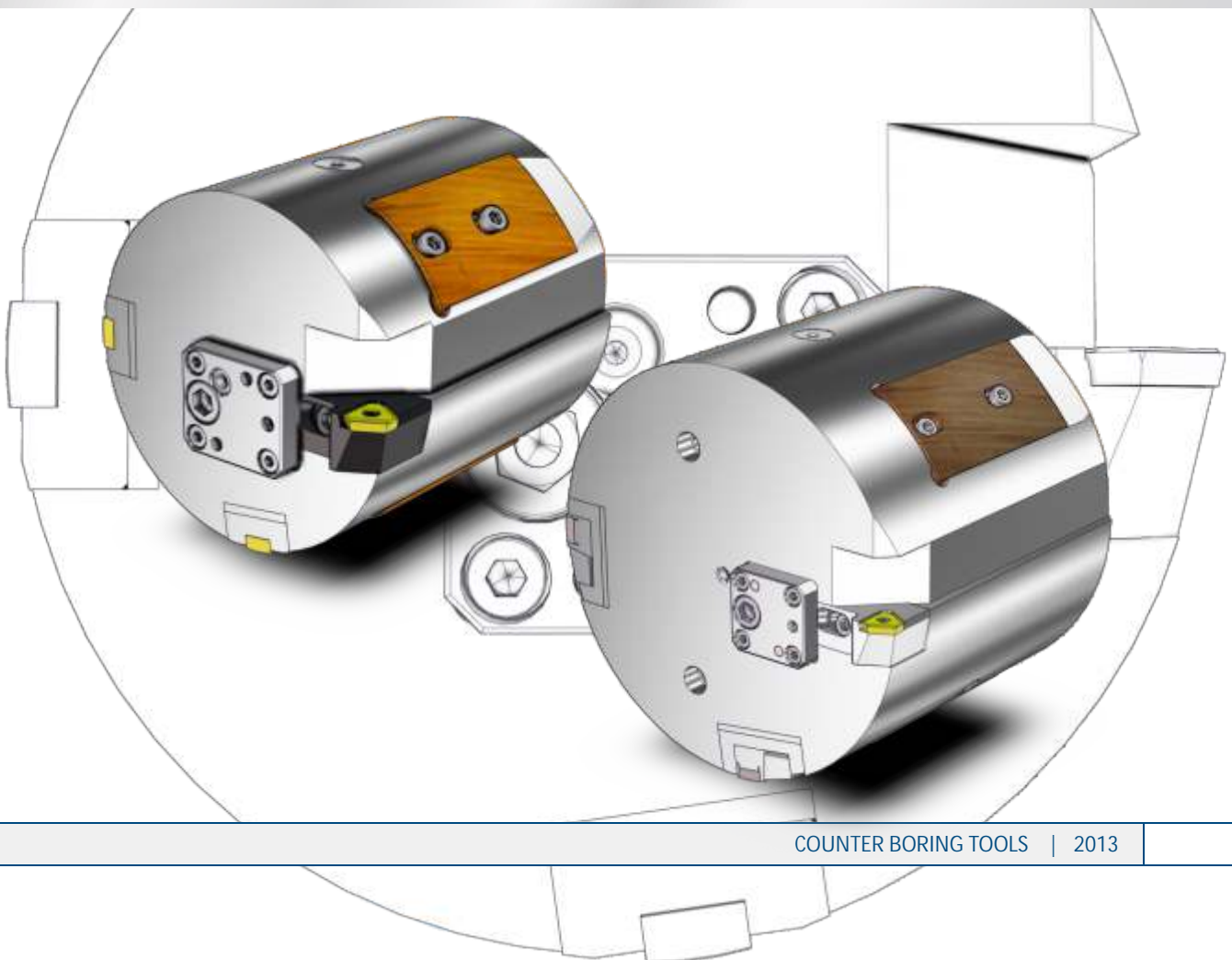
DEEP HOLE BORING TECHNOLOGY | EQUIPMENT

## Counter Boring Tools

Type 1105

DEEP HOLE BORING TOOLS

BORING RANGE Ø 150,00 - 401,99 mm



## Properties of BTA Deep Hole Boring Tools

### 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 these two factors. In the field of deep hole boring our company, BTA-Tiefbohrsysteme GmbH, is an 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 to tool service. All this is aimed at your success.

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, 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 such as straightness, surface, material and even wall thickness.
- Equipment matched to the deep hole boring process - from workpiece clamping to vibration damping.
- Production-optimized machinery layout e.g. for reducing setup and conversion times.

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

- Surface  $R_a < 0.1 \mu\text{m}$  e.g. by skiving and roller burnishing
- Mismatch of axes  $< 0.1\text{mm/m}$  e.g. by pull counter boring
- Hole accuracy  $< IT8$  e.g. by skiving

Benefit from these advantages by cooperating with a strong partner.





## Contents

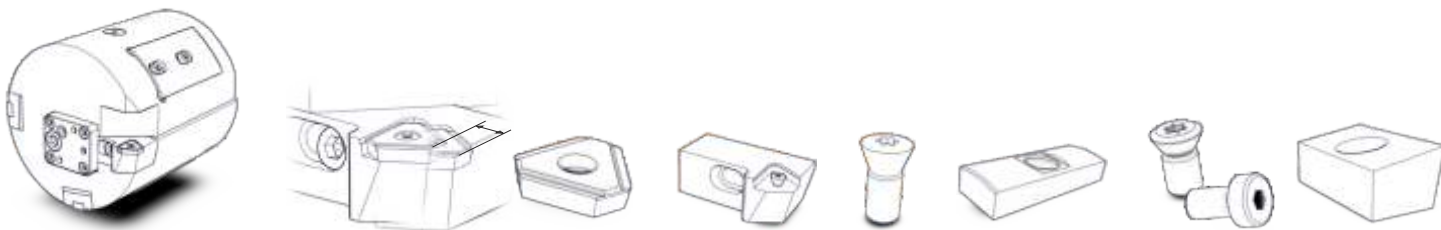
Contents	3
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Conversion instructions	7

### Tool characteristics

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

## Counter Boring Tools Type 1105

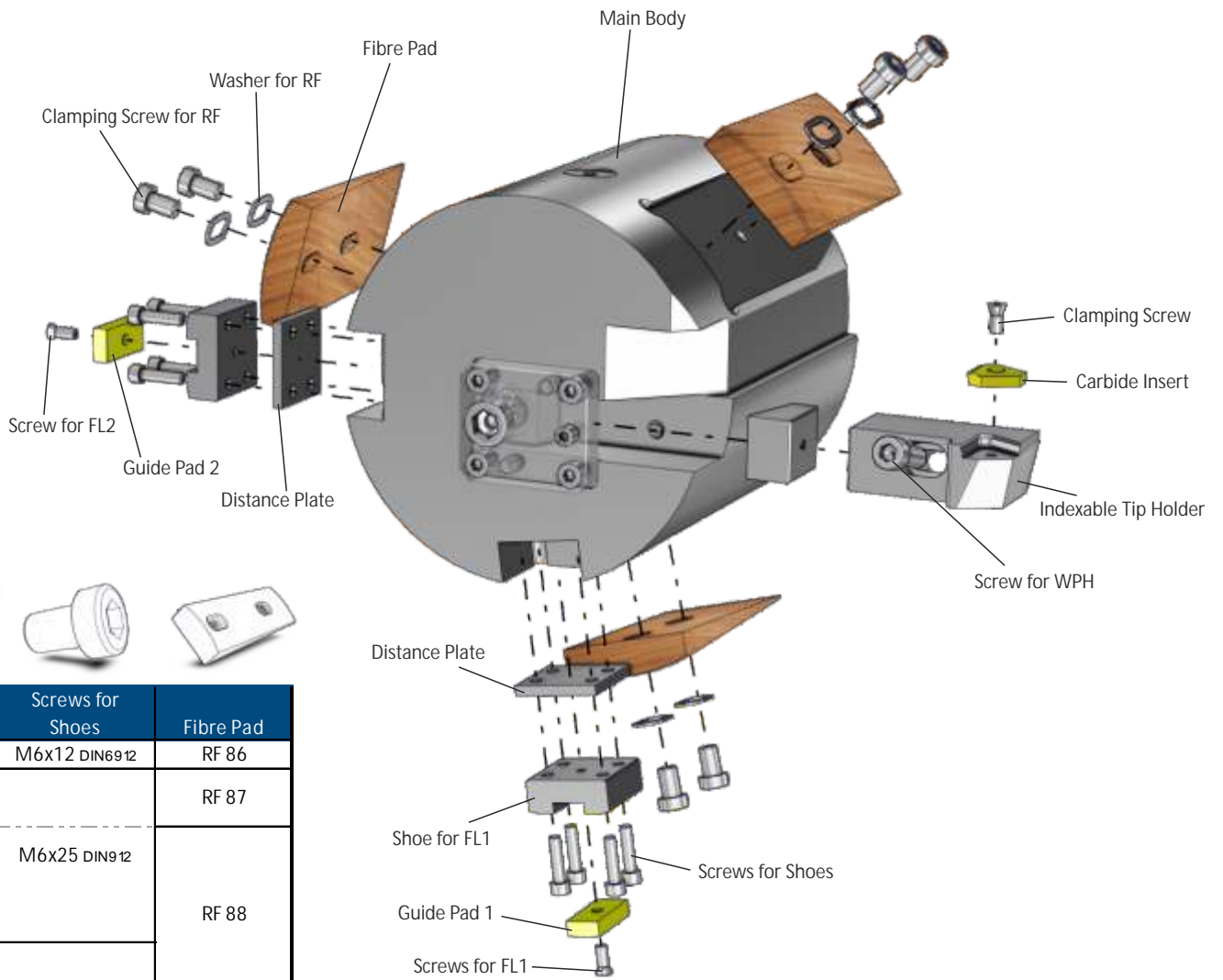
Boring Range Ø 150,00 - 401,99 mm



Boring Range	Drill Tube Connection	max. adjustment in diameter	Carbide Insert pos. 1	Indexable Tip Holder	Clamping Screw	Guide Pad FL1 and FL2	Clamping Screw for FL/KL	Wedge
Ø 150,00 - Ø 161,99	118	+ 10 mm						
Ø 162,00 - Ø 173,99	130					FL 18 / R 65	M6x16 T20	
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					+ 20 mm		
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					FL 30 / R 190		

Additional diameters on request

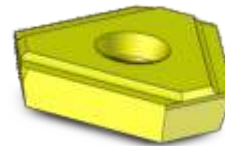
See Page 6 for spare and wear parts ordering data



Shoe for Guide Pad	Screws for Shoes	Fibre Pad
016.9962.Q	M6x12 DIN6912	RF 86
		RF 87
018.9434.M	M6x25 DIN912	RF 88
		RF 89
011.2270.S	M6x30 DIN912	RF 89
		RF 90

## Spare and wear parts

### Indexable Insert AK 40

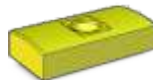


Description	Chip Breaker	Carbide		
		P20 TiN	K20 TiN	K10
AK 40	Gr.1 - 2,5x0,8	011.2844.S	013.9685.K	011.2779.B

Additional chip breaker and coatings on request

### Guide Pad 1 and 2

Description	Radius	Carbide	
		TiN coated	ML coated
FL 18	65	016.9238.S	019.6683.P
	90	019.2768.L	019.6684.Q



Description	Radius	Ident-No.
FL 30	100	010.2425.V
	125	010.2426.T
	150	010.2427.R
	170	010.2428.P
	190	010.2429.M



### Fibre Pads RF 86 to RF 90



Description	Ident-No. Hartgewebe	Washer	Screws
RF 86	018.4004.F	011.2043.E	M6x16 DIN6912
RF 87	018.4005.G		
RF 88	018.4006.H	011.2042.G	M10x16 DIN7984
RF 89	011.9935.B		
RF 90	011.9936.Z		



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: 3 pieces per tool.

## Spare and wear parts

### Torx-Screws



Size	Length	Ident-No. Clamping Screw	Torx Size	Ident-No. Torx-Screw
M6	14	016.4592.A	T20	008.7220.T
	16	010.7708.F		



### Socket Head Cap Screws



Size	Length	Ident-No. Clamping Screw	SW Size	Ident-No. Hexagon Wrench
M6 / DIN 7984	12	008.5020.N	SW 4	008.7214.N
M6 / DIN 6912	16	008.5021.L	SW 5	008.6948.U
M6 / DIN 912	25	008.5123.C		008.5838.H
	30	008.5124.A		
M10 / DIN 7984	16	008.5042.L	SW 7	008.5840.W



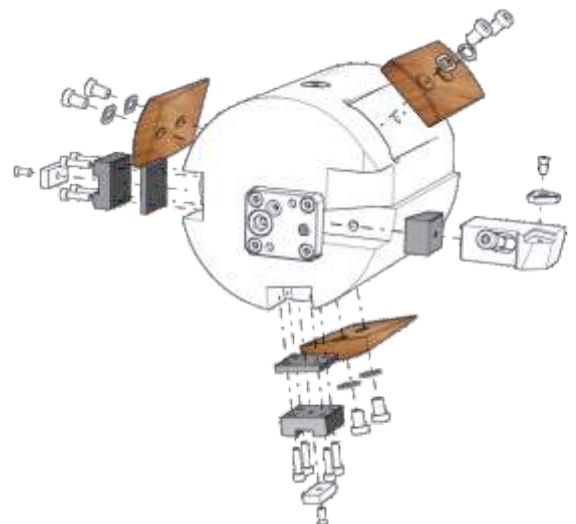
## Conversion instructions

To the remodeling of the counter boring tools on another diameter conversion kits are required, which consist of the following components:

- The diameter at a height corresponding distance plates and shoes for the guide pads.
- A the diameter range of the head associated wedge for insert holders.
- Excessive fibre pads (turning to the correct diameter necessary).

The setting of the holder via the measuring from cutting to opposite guide pad.

Different or larger diameter ranges and specific features of counter boring tools on request.





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Our program:





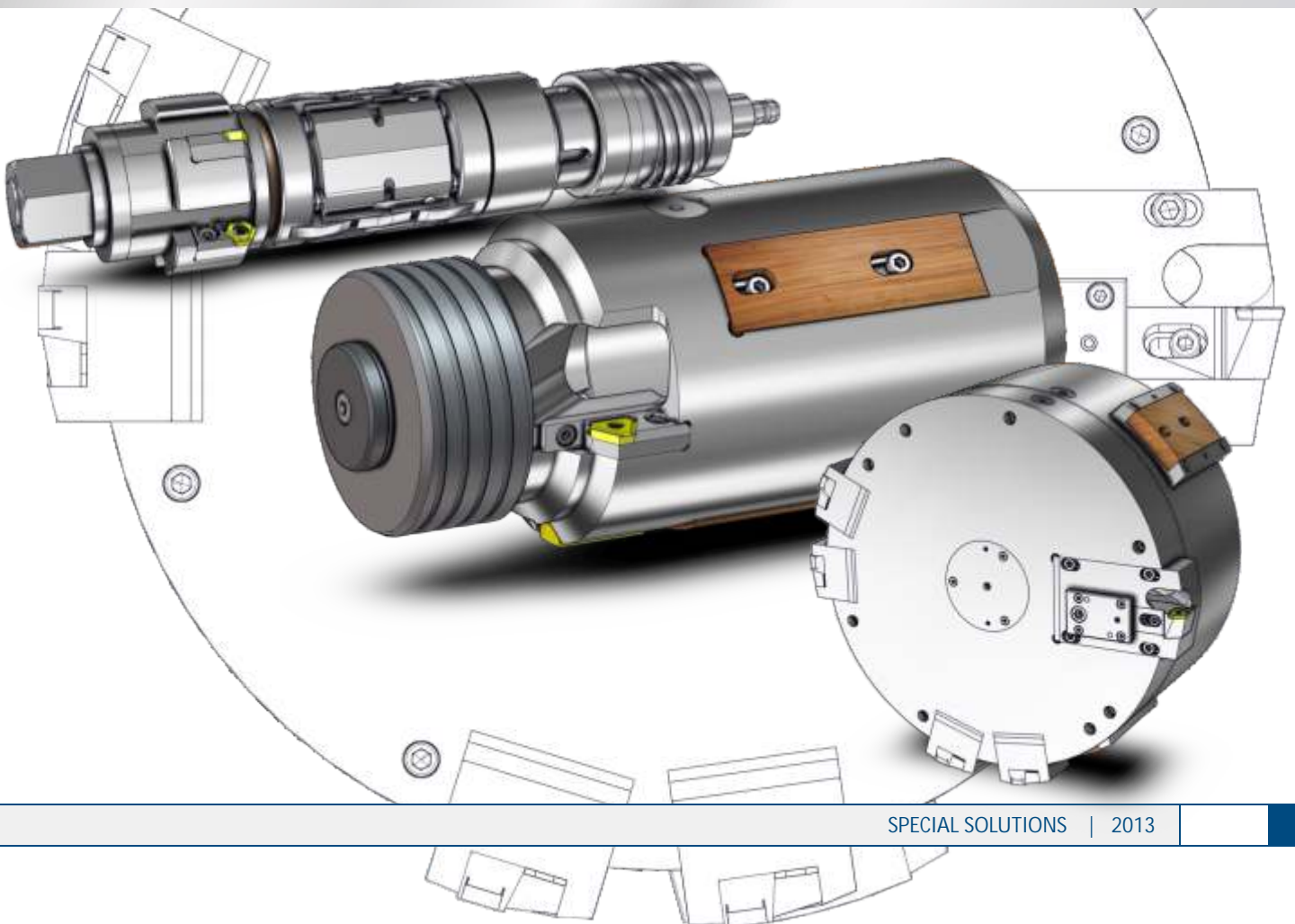


**TiefbohrSysteme**<sup>®</sup> GmbH

DEEP HOLE BORING TECHNOLOGY | EQUIPMENT

# Counter Boring Tools

Special solutions



## Properties of BTA Deep Hole Boring Tools

### 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 these two factors. In the field of deep hole boring our company, BTA-Tiefbohrsysteme GmbH, is an 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 to tool service. All this is aimed at your success.

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, 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 such as straightness, surface, material and even wall thickness.
- Equipment matched to the deep hole boring process - from workpiece clamping to vibration damping.
- Production-optimized machinery layout e.g. for reducing setup and conversion times.

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

- Surface  $R_a < 0.1 \mu\text{m}$  e.g. by skiving and roller burnishing
- Mismatch of axes  $< 0.1\text{mm/m}$  e.g. by pull counter boring
- Hole accuracy  $< IT8$  e.g. by skiving

Benefit from these advantages by cooperating with a strong partner.





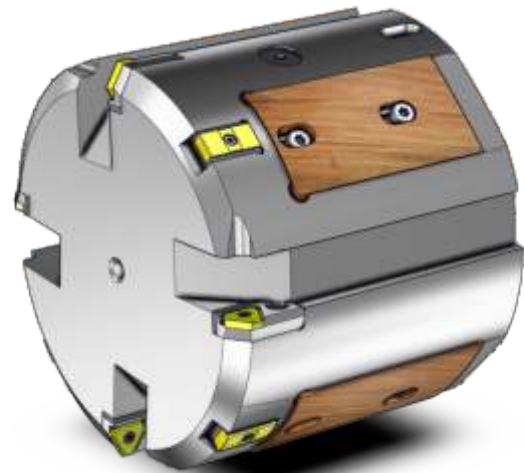
## Contents

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Multi Cutter Counter Boring Tools pushed/pulled	4
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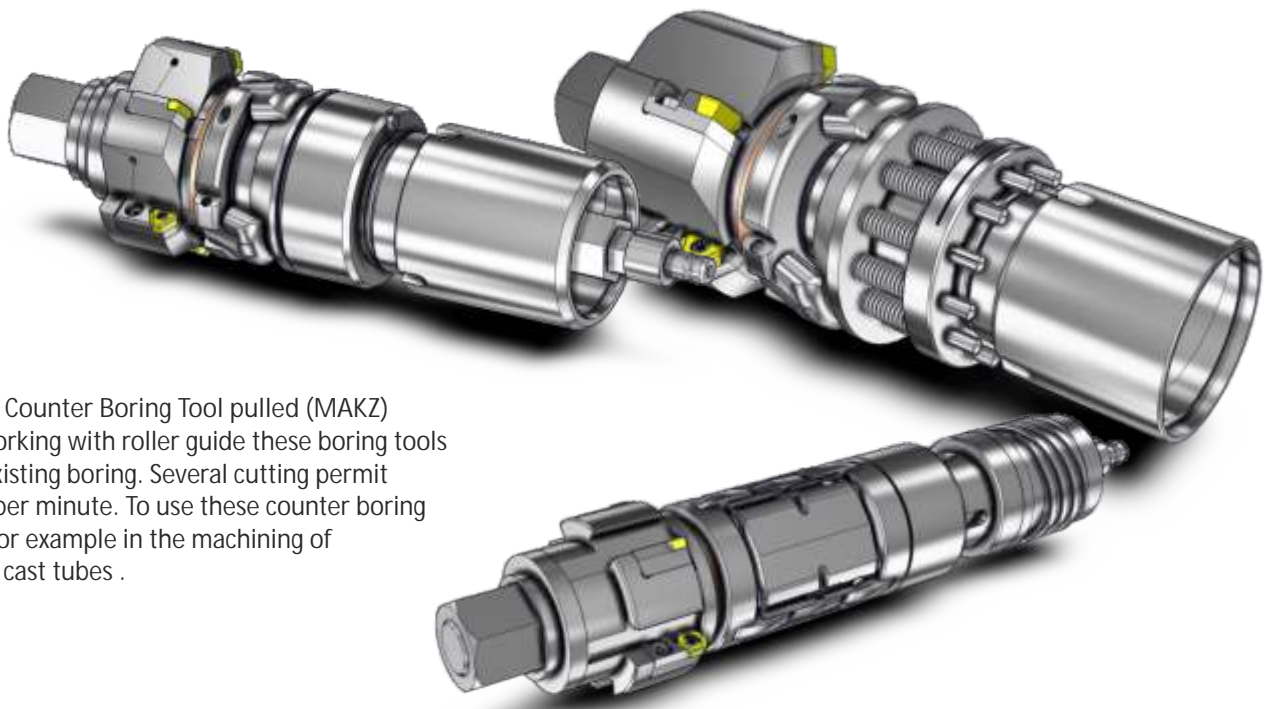
## Counter Boring Tools

MAK



Multi Cutter Counter Boring Tool (MAK)  
Through the use of several cuttings higher feed per minute are possible. Application areas are counter boring operations in short workpieces with an oversize 4 - 20 mm in diameter.

MAKZ



Multi Cutter Counter Boring Tool pulled (MAKZ)  
By pulling working with roller guide these boring tools follow the existing boring. Several cutting permit higher feed per minute. To use these counter boring tools come for example in the machining of centrifugally cast tubes .



## Counter Boring Tools

### Stepped-AK

Stepped Counter Boring Tool (Stepped-AK)  
For producing several diameter



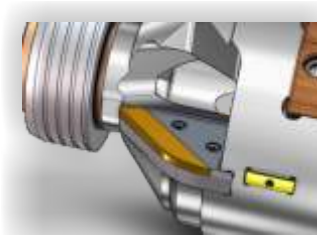
### Stepped-AK with Roller Guide

Stepped Counter Boring Tool with Roller Guide  
(Stepped-AK with Roller Guide)  
To produce bores extending concentric with each other  
having different diameters



### Form-AK with/without Roller Guide

To produce bevels and chamfers in the hole...



...and at the hole bottom.

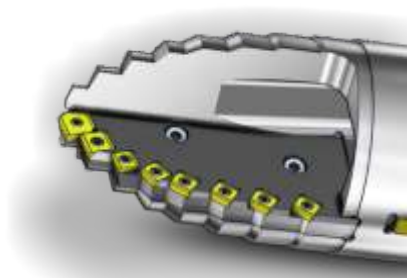


## Counter Boring Tools

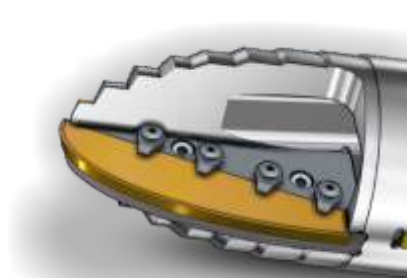
Form-AK



Form Counter Boring Tools (Form-AK)  
With roughing and finishing cutters for machining  
large geometric elements in the bore



Roughing Cutter



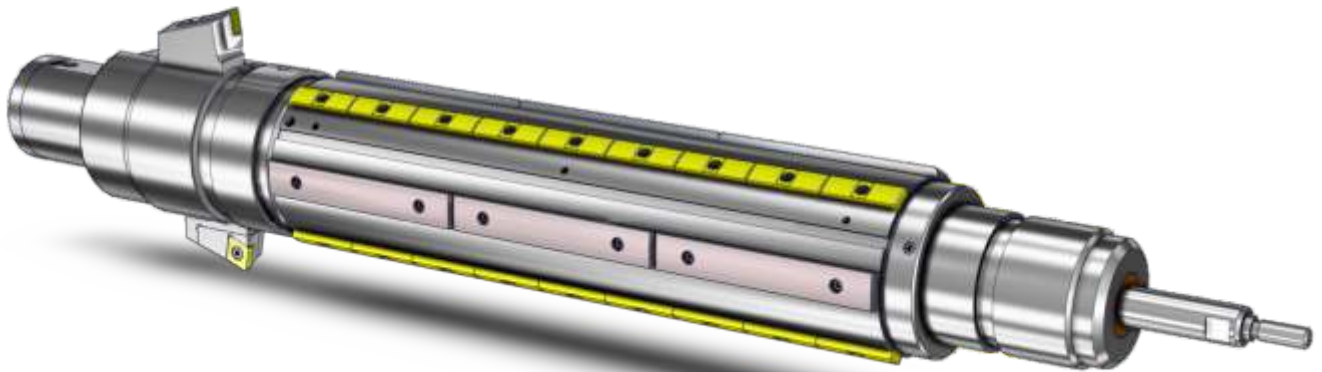
Finishing Cutter



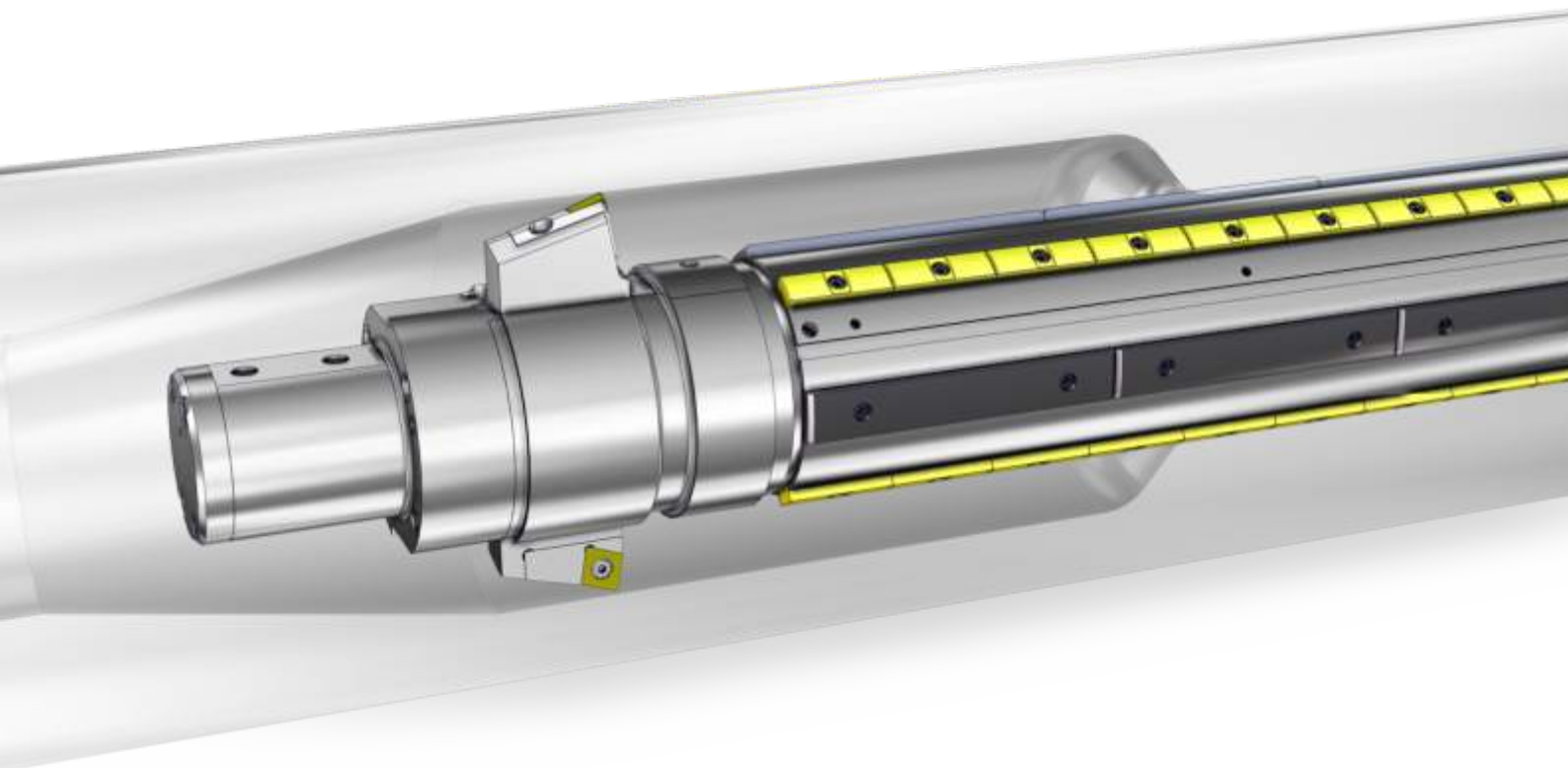


## Counter Boring Tools

Chamber boring



In this processing method can be used externally controlled tools. They are actuated by a push rod which is guided within the drill tube. It is driven by a linear actuator, which receives its commands from an additional axis CNC control the deep hole drilling machine. Guided the tool in a precise pilot boring. The procedure is usually pulling. Diameter changes and transitions can thus be produced in certain diameter ranges.





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Our program:







**TiefbohrSysteme**<sup>®</sup> GmbH

DEEP HOLE BORING TECHNOLOGY | EQUIPMENT

## Skiving Tools

Type 1200

DEEP HOLE DRILLING TOOLS

BORING RANGE Ø 15,00 - 401,99 mm



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- Hole accuracy  $< IT8$  e.g. by skiving

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## Contents

Contents	3
Skiving Tool Type 1209	4
Skiving Tool Type 1232	6
Skiving Tool Type 1232	6
Skiving Tool Type 1210/1217	8

### Tool characteristics

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

## Skiving Tool Type 1209

Skiving tools with carbide insert



Tool description:

Skiving tools with exchangeable cutting inserts and fiber pads. These tools are designed for sizing holes to achieve extremely close boring tolerances and geometrically round holes.

The tool cutters are ground radially. Four each fiber pads support the tools in the bores.

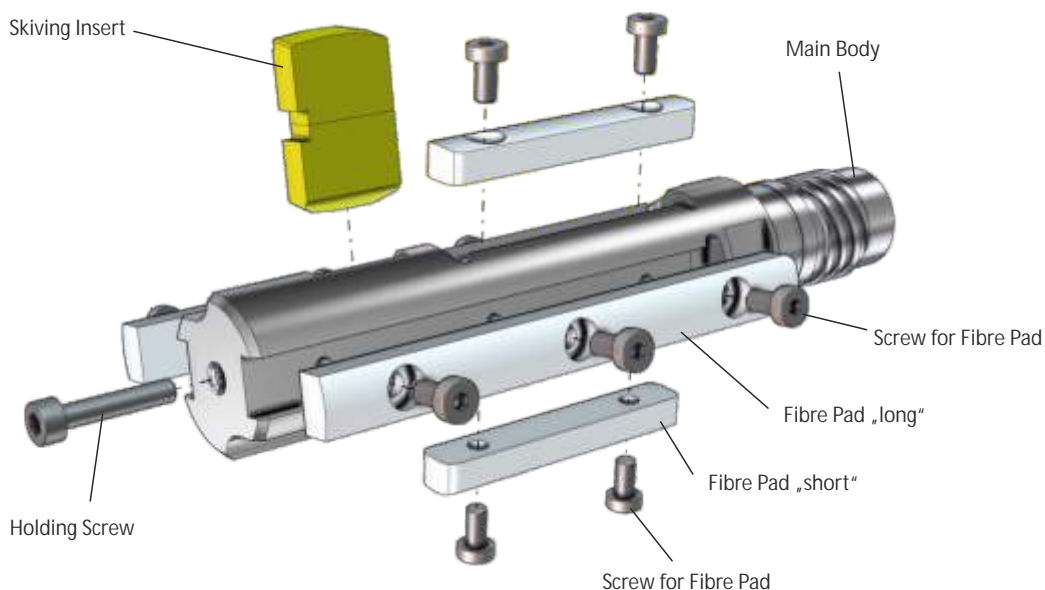
Cutting depths of between 0.05 and 0.35 mm are achieved per side. The application range for these tools is for diameters between 15.00 and 29.99 mm.

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

Peak-to-valley heights are less than R 2.5 µm. The surface quality is open, i.e. particularly suited for subsequent burnishing or honing.

Skiving tools follow the pilot hole and do not change the direction of the hole.

Boring Range	Drill Tube Connection	Fibre Pads
Ø 15,00 - Ø 15,99	14	Gr. 1
Ø 16,00 - Ø 16,99		Gr. 2
Ø 17,00 - Ø 17,99	15	Gr. 3
Ø 18,00 - Ø 19,99	16,5	
Ø 20,00 - Ø 20,99	18	Gr. 4
Ø 21,00 - Ø 21,99		
Ø 22,00 - Ø 24,99	20	Gr. 5
Ø 25,00 - Ø 26,99	22	
Ø 27,00 - Ø 29,99	24	





## Skiving Tool Type 1209 - Spare and wear parts

Fibre Pad for Type 1209, long design



Description	Order No.		Screws for Fibre Pad	Hexagon Wrench
	Fibre	Polyamid		
Gr. 1	011.8421.Q	011.8433.H	M3x6 008.5467.S	SW 2 008.5439.X
Gr. 2	011.8423.L	011.8435.D		
Gr. 3	011.8425.G	011.8437.Z		
Gr. 4	011.8427.C	011.8439.U		
Gr. 5	011.8429.X	011.8441.J	M3x8 - 008.5436.E	



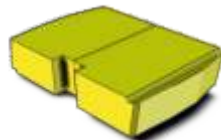
Fibre Pad for Type 1209, short design



Description	Order No.		Screws for Fibre Pad	Hexagon Wrench
	Fibre	Polyamid		
Gr. 1	011.8420.S	011.8432.K	M3x6 008.5467.S	SW 2 008.5439.X
Gr. 2	011.8422.N	011.8434.F		
Gr. 3	011.8424.J	011.8436.B		
Gr. 4	011.8426.E	011.8438.W		
Gr. 5	011.8428.A	011.8440.L	M3x8 - 008.5436.E	



Skiving Insert



Boring Range	Ident-No. Carbide P10
Ø 15,00 - Ø 29,99	Numbering depending on the diameter

## Skiving Tool Type 1232

Skiving tools Type 1232 with 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 fiber pads for supporting the tool in the hole. The burnishing tool has a threaded intermediate element for hydraulic connection. All parts mentioned are replaceable.

Tools of this type allow skiving in the pushing direction with the chips exiting in the feed direction.

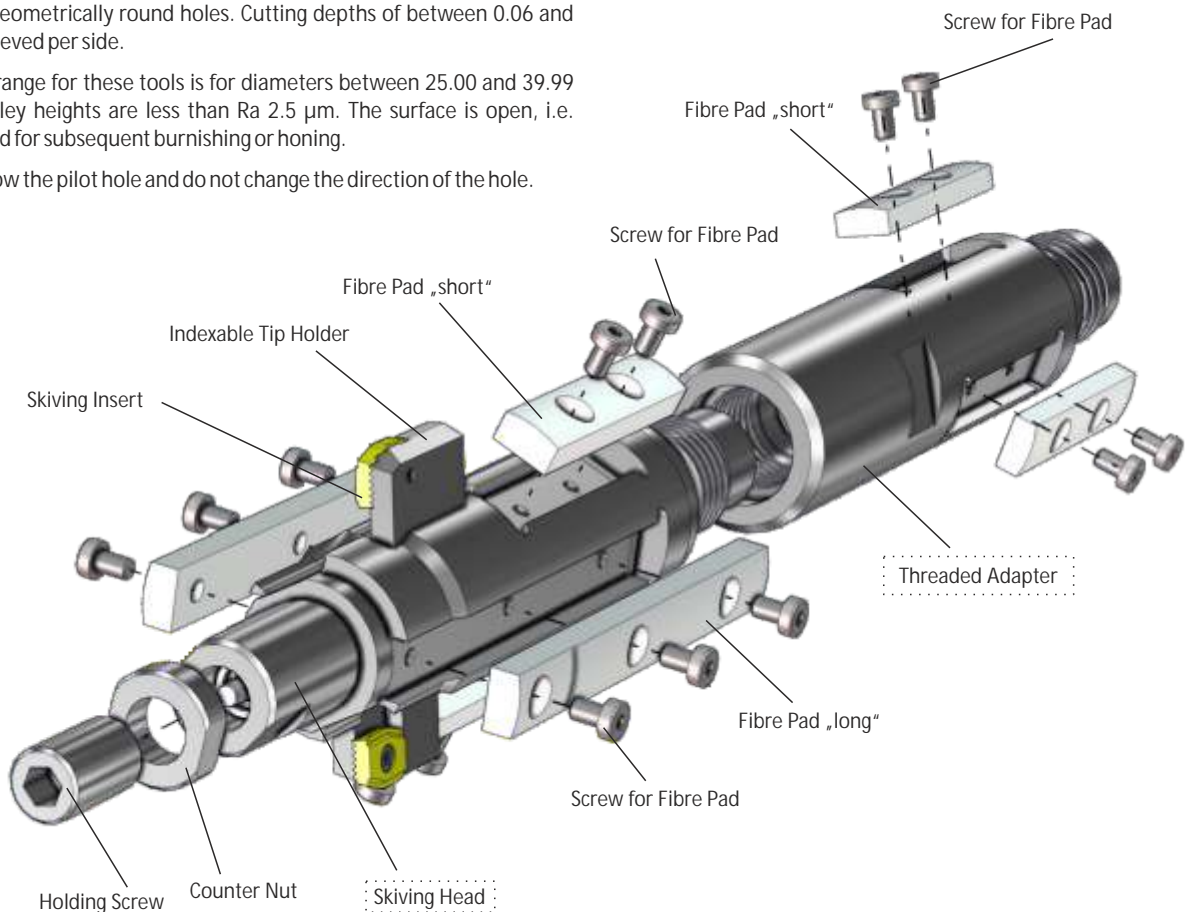
These tools are designed for sizing holes to achieve extremely close hole tolerances and geometrically round holes. Cutting depths of between 0.06 and 0.50 mm are achieved per side.

The application range for these tools is for diameters between 25.00 and 39.99 mm. Peak-to-valley heights are less than Ra 2.5 µm. The surface is open, i.e. particularly suited for subsequent burnishing or honing.

Skiving tools follow the pilot hole and do not change the direction of the hole.

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	

The mechanical design allows no automatic cutting inserts retraction.



## Skiving Tool Type 1232 - Spare and wear parts

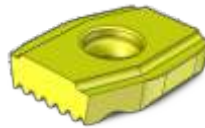
Cutter Magazine  
for Type 1232



Boring Range	Ident-No. Cutter Magazine	Ident-No. Clamping Screw	Ident-No. Hexagon 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. Carbide coated
Ø 25,00 - Ø 39,99	019.2704.U



Fibre Pad for Type 1232



Boring Range	Fibre Pad "short"	Fibre Pad "long"	Screw for Fibre Pad	Ident-No. Hexagon Wrench
Ø 25,00 - Ø 29,99	018.7342.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

## Skiving Tools Type 1210/1217

Type 1210 - Skiving Tools in mechanical design

Type 1217 - Skiving Tools 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 382,00 - Ø 293,99	250
Ø 394,00 - 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:

Skiving tool with insert holders installed in exchangeable insert pocket. 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 fiber pads for supporting the tool in the hole.

Tools of this type allow skiving in the pushing direction with the chips exiting in the feed direction.

These tools are designed for sizing holes to achieve extremely close boring tolerances and geometrically round holes.

The cutting depths are distributed between two cutters to ensure better chip removal and optimum surfaces.

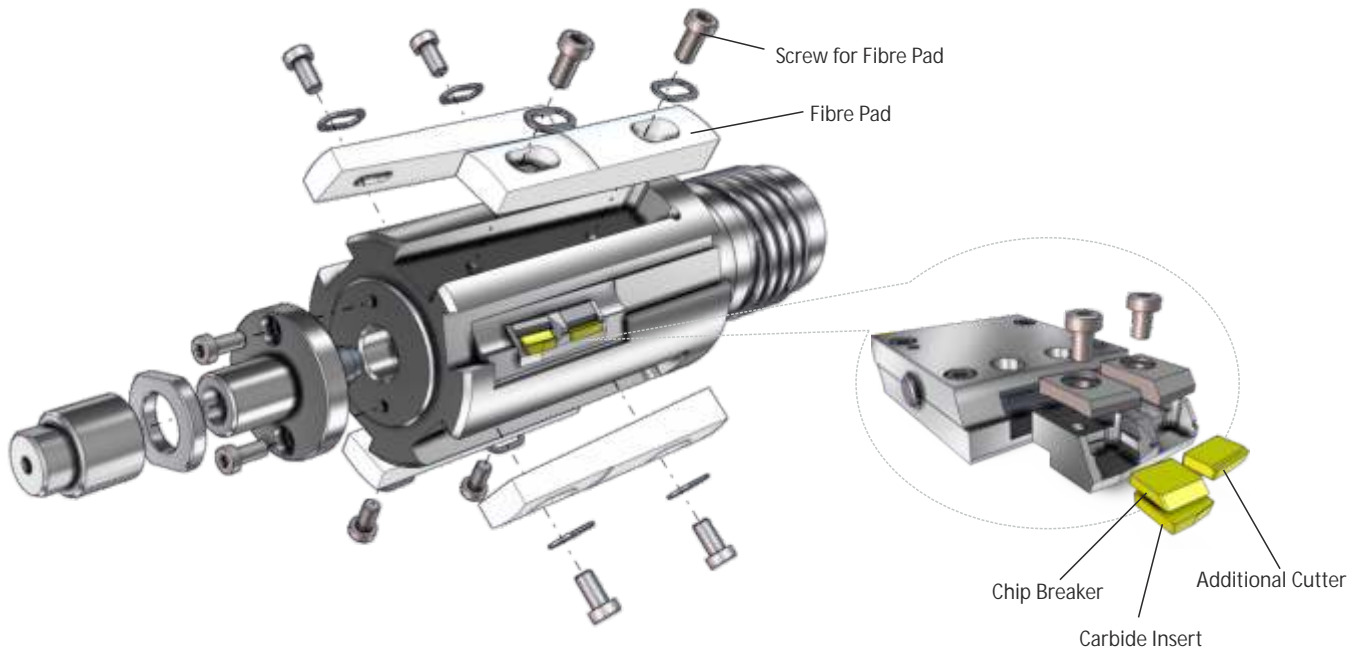
Cutting depths of between 0.05 and 0.50 mm are achieved per side. The application range for these tools is for diameters between 40.00 and 401.99 mm.

Peak-to-valley heights are less than R 2.5 µm. The surface quality is open, i.e. particularly suited for subsequent burnishing or honing.

Skiving tools follow the pilot hole and do not change the direction of the hole.



## Skiving Tools Type 1210/1217 - Spare and wear parts



### Indexable / Clamping Insert Holder for Type 1210/1217

Boring Range	WPH Size	Ident-No. Indexable Insert Holder	Ident-No. Clamping Insert Holder
Ø 40,00 - Ø 42,99	01	018.9654.R	019.6580.G
Ø 43,00 - Ø 45,99		019.2185.D	019.6979.X
Ø 46,00 - Ø 49,99	1	019.2186.E	019.6980.Y
Ø 50,00 - Ø 60,99		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



## Skiving Tools Type 1210/1217 - Spare and wear parts

Indexable Insert / Additional Insert for Type 1210/1217

Range: Ø40,00 - 60,99 mm



Boring Range	Indexable Insert		Additional Insert	
	P20 coated	K35 coated	P20 coated	K20 coated
Ø 40,00 - Ø 60,99	018.9670.H	018.9805.Y	018.9705.U	018.9657.U

Indexable Insert / Chip Breaker / Additional Insert for Type 1210/1217

Range: at Ø61,00 mm



Boring Range	Indexable Insert		Chip Breaker		Additional Insert	
	P20 coated	P20	P20 coated	P20	P20 beschichtet	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 1210/1217



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

## Skiving Tools Type 1210/1217 - Spare and wear parts

Fibre Pads for Type 1210/1217



Boring Range	Size	Ident-No. Polyamid	Washer	Screws for Fibre Pads	Ident-No. Hexagon Wrench
Ø 40,00 - Ø 43,99	10	011.8381.A	011.2044.C	M4x10 DIN7984 008.5000.U	SW3 - 008.7213.Q
Ø 44,00 - Ø 56,99	12	011.8382.X			
Ø 57,00 - Ø 67,99	16	013.2517.V			
Ø 68,00 - Ø 110,99	20	011.8383.V	011.2043.E	M6x16 DIN6912 008.5021.L	SW5 - 008.6948.U
Ø 111,00 - Ø 148,99	30	013.2531.C			
Ø 149,00 - Ø 257,99	50	011.8384.T			
Ø 258,00 - Ø 401,99	80	013.2535.T	011.2042.G	M10x20 DIN7984 008.5043.A	SW8 - 008.7216.J

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

Standard placement: 3 pieces per tool.



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Our program:





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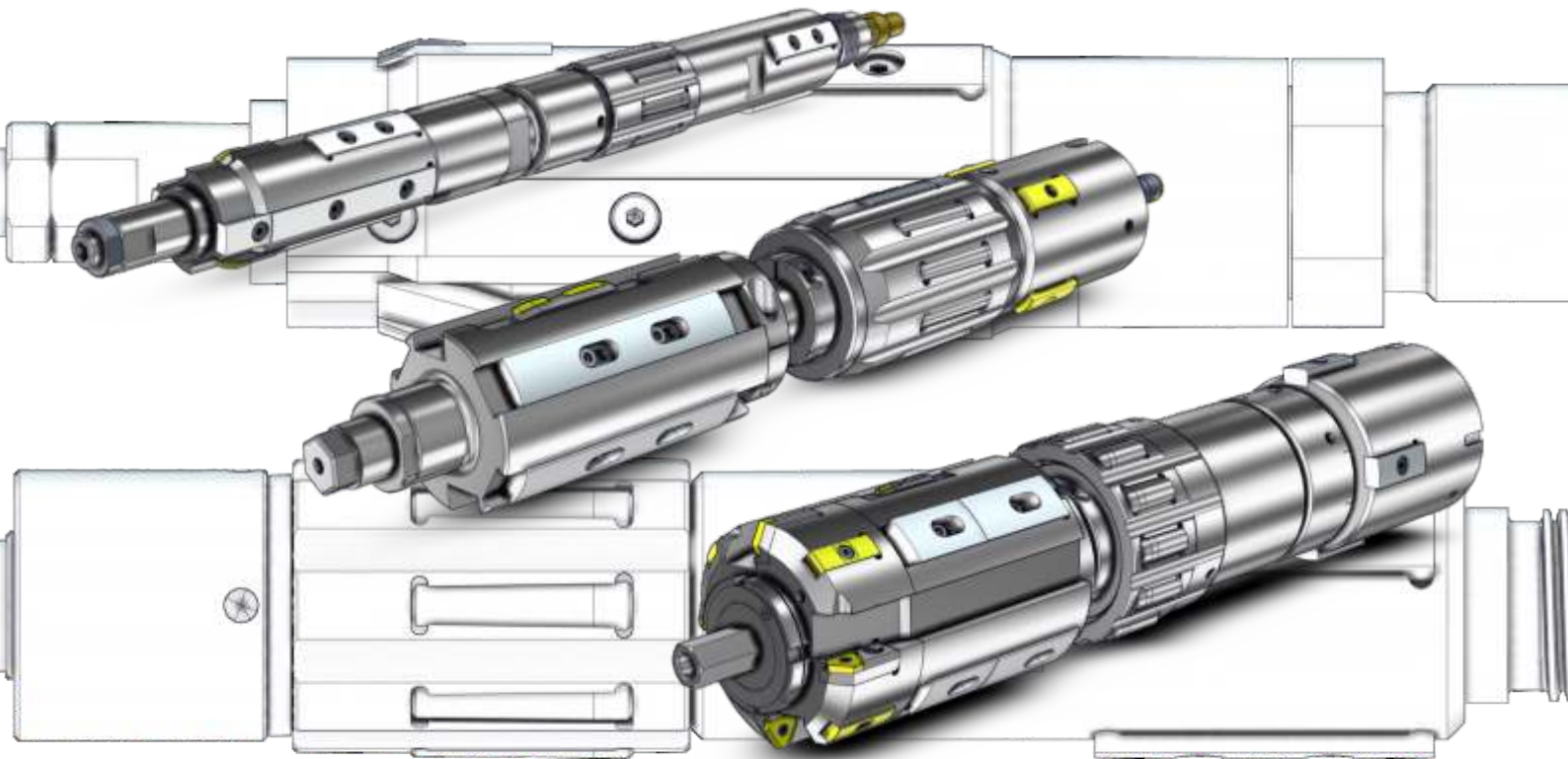
DEEP HOLE BORING TECHNOLOGY | EQUIPMENT

## Skiving and Roller Burnishing Tools

Type 1200

DEEP HOLE DRILLING TOOLS

SKIVING RANGE Ø 25,00 - 401,99 mm



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- Surface  $R_a < 0.1 \mu\text{m}$  e.g. by skiving and roller burnishing
- Mismatch of axes  $< 0.1\text{mm/m}$  e.g. by pull counter boring
- Hole accuracy  $< IT8$  e.g. by skiving

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## Contents

Contents	3
Skiving Tools Type 1232	4
Skiving Tools Type 1207	6
Skiving Tools Type 1230	8
Skiving Tools Type 1220	12

### Tool characteristics

- drilling depth to 400 x Werkzeugdurchmesser
- surface up to  $R_a$  1,25  $\mu$ 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.

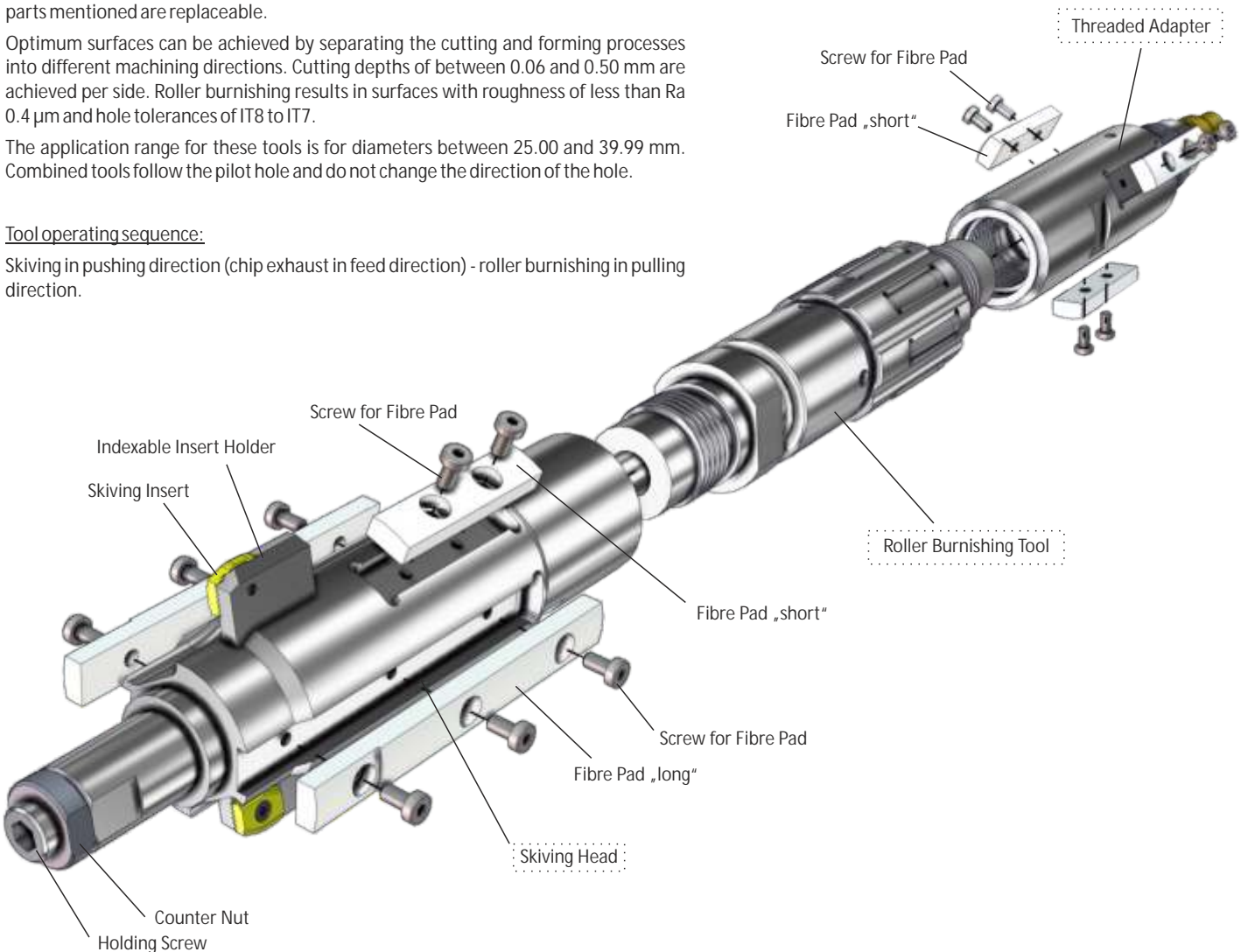
Optimum surfaces can be achieved by separating the cutting and forming processes into different machining directions. Cutting depths of between 0.06 and 0.50 mm are achieved per side. Roller burnishing results in surfaces with roughness of less than Ra 0.4 µm and hole tolerances of IT8 to IT7.

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

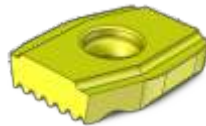
Cutter Magazine for Type 1232



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	018.7342.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 382,00 - Ø 293,99	250
Ø 394,00 - 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	01	018.9654.R	019.6580.G
Ø 43,00 - Ø 45,99		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			008.7241.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 172,99	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 382,00 - Ø 293,99	250
Ø 394,00 - 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



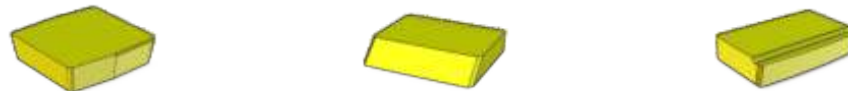
Boring Range	Indexable Insert		Additional Cutter	
	P20 coated	K35 coated	P20 coated	K20 coated
Ø 40,00 - Ø 60,99	018.9670.H	018.9805.Y	018.9705.U	018.9657.U



Boring Range	Insert Holder Size	Ident-No. Indexable Insert Holder	Ident-No. Clamping Insert Holder
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 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 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 57,00 - Ø 67,99	16	013.2517.V	011.2044.C	M4x10 DIN7984 008.5000.U	SW3 - 008.7213.Q
Ø 68,00 - Ø 122,99	20	011.8383.V	011.2043.E	M6x16 DIN6912 008.5021.L	SW5 - 008.6948.U
Ø 123,00 - Ø 173,99	30	019.5845.R			
Ø 174,00 - Ø 399,99	50	019.5846.S			
Ø 258,00 - Ø 401,99	80	019.5847.T	011.2042.G	M10x20 DIN7984 008.5043.A	SW8 - 008.7216.J

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: 3 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 61,00 - Ø 74,99			008.9074.R	017.3839.Q
Ø 75,00 - Ø 80,99			010.7705.M	
Ø 81,00 - Ø 85,99			008.0805.B	
Ø 86,00 - Ø 90,99			008.9017.E	017.3602.Z
Ø 91,00 - Ø 105,99	Numbering depending on the diameter	Numbering depending on the diameter	008.0920.B	
Ø 106,00 - Ø 116,99			008.7278.K	
Ø 117,00 - Ø 141,99				
Ø 142,00 - Ø 148,99				017.1356.X
Ø 149,99 - Ø 154,99			008.7862.A	
Ø 155,00 - 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 172,99	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.



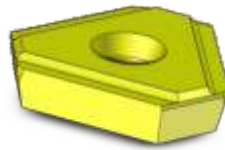
See Page 13 for Indexable Inserts ordering data,  
See Page 14 for Guide Pads and Fibre Pads ordering data.





## Spare and wear parts for Type 1220

Indexable Inserts Size AK 16 - AK 40



Description	Chip Breaker	Carbide		
		P20 TiN	K20 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



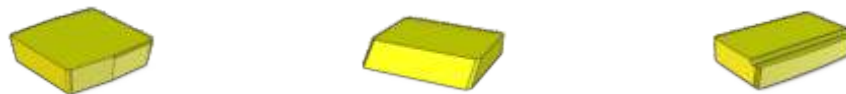
Boring Range	Insert Holder Size	Ident-No.	
		Indexable Insert Holder	Clamping Insert Holder
Ø 68,00 - Ø 122,99	2	014.0238.E	017.0616.D
Ø 123,00 - Ø 401,99	3	014.0240.T	017.0618.Z



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

Indexable Insert / Chip Breaker / Additional Insert for Type 1220

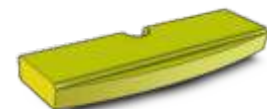
Range: from Ø68,00 mm



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	Screws for Fibre Pads	Ident-No. Hexagon Wrench
Ø 68,00 - Ø 122,99	20	011.8383.V	011.2043.E	M6x16 DIN6912 008.5021.L	SW5 - 008.6948.U
Ø 123,00 - Ø 173,99	30	019.5845.R			
Ø 174,00 - Ø 399,99	50	019.5846.S			
Ø 400,00 - Ø 401,99	80	019.5847.T	011.2042.G	M10x20 DIN7984 008.5043.A	SW8 - 008.7216.J

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: 3 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	017.3839.Q
Ø 75,00 - Ø 80,99			010.7705.M	
Ø 81,00 - Ø 85,99			008.0805.B	
Ø 86,00 - Ø 98,99	Numbering depending on the diameter	Numbering depending on the diameter	008.9017.E	017.3602.Z
Ø 99,00 - 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			008.7862.A	017.1356.X
Ø 149,99 - Ø 245,99				017.1394.P
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.





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Your Contact

Our program:



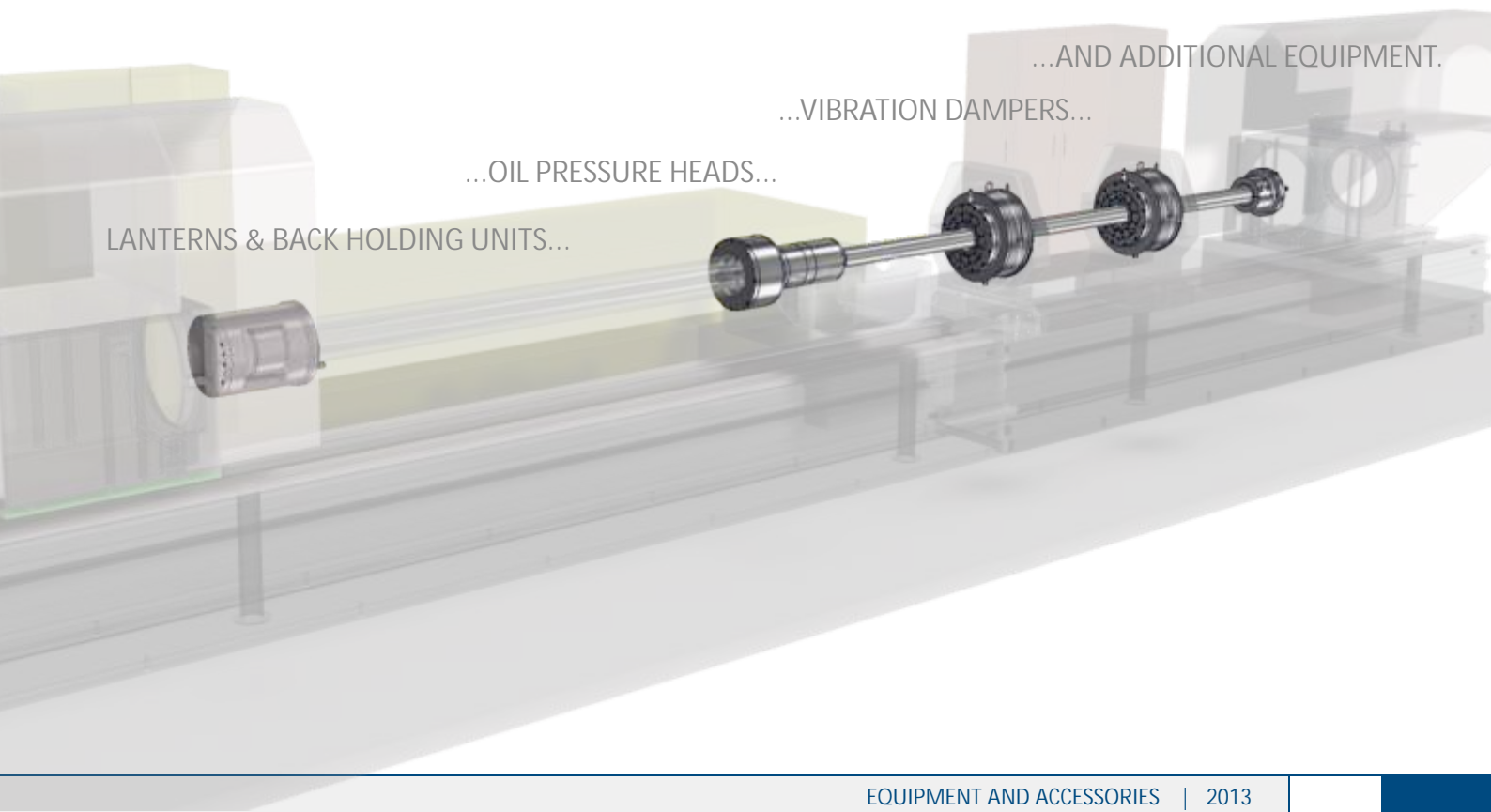


**TiefbohrSysteme**® GmbH  
DEEP HOLE BORING TECHNOLOGY | EQUIPMENT

## Equipment and Accessories

Passion for precision

ACCESSORIES FOR DEEP HOLE  
DRILLING MACHINES IN BTA-PROCESS



LANTERNS & BACK HOLDING UNITS...

...OIL PRESSURE HEADS...

...VIBRATION DAMPERS...

...AND ADDITIONAL EQUIPMENT.

## Properties of BTA Deep Hole Boring Tools

### 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 these two factors. In the field of deep hole boring our company, BTA-Tiefbohrsysteme GmbH, is an 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 to tool service. All this is aimed at your success.

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, 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 such as straightness, surface, material and even wall thickness.
- Equipment matched to the deep hole boring process - from workpiece clamping to vibration damping.
- Production-optimized machinery layout e.g. for reducing setup and conversion times.

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

- Surface  $R_a < 0.1 \mu\text{m}$  e.g. by skiving and roller burnishing
- Mismatch of axes  $< 0.1\text{mm/m}$  e.g. by pull counter boring
- Hole accuracy  $< IT8$  e.g. by skiving

Benefit from these advantages by cooperating with a strong partner.

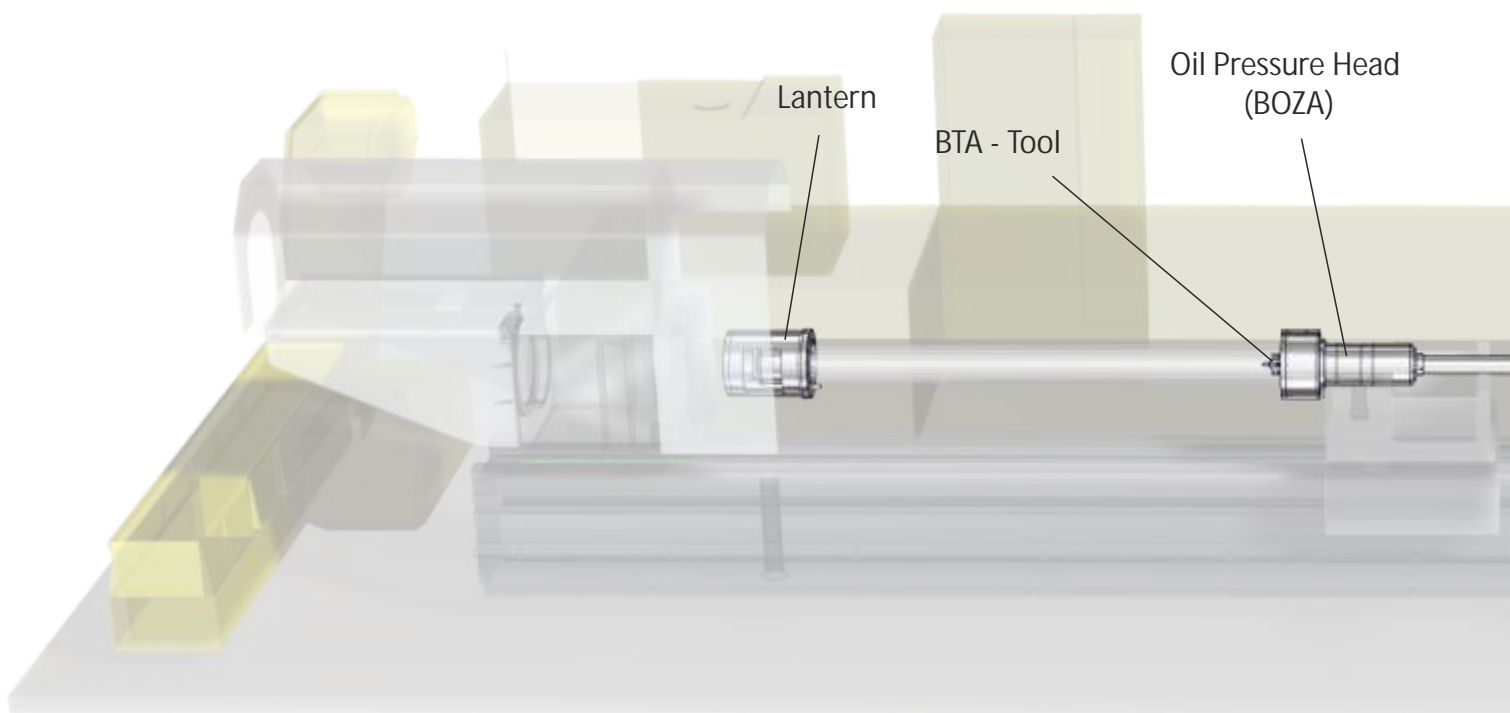




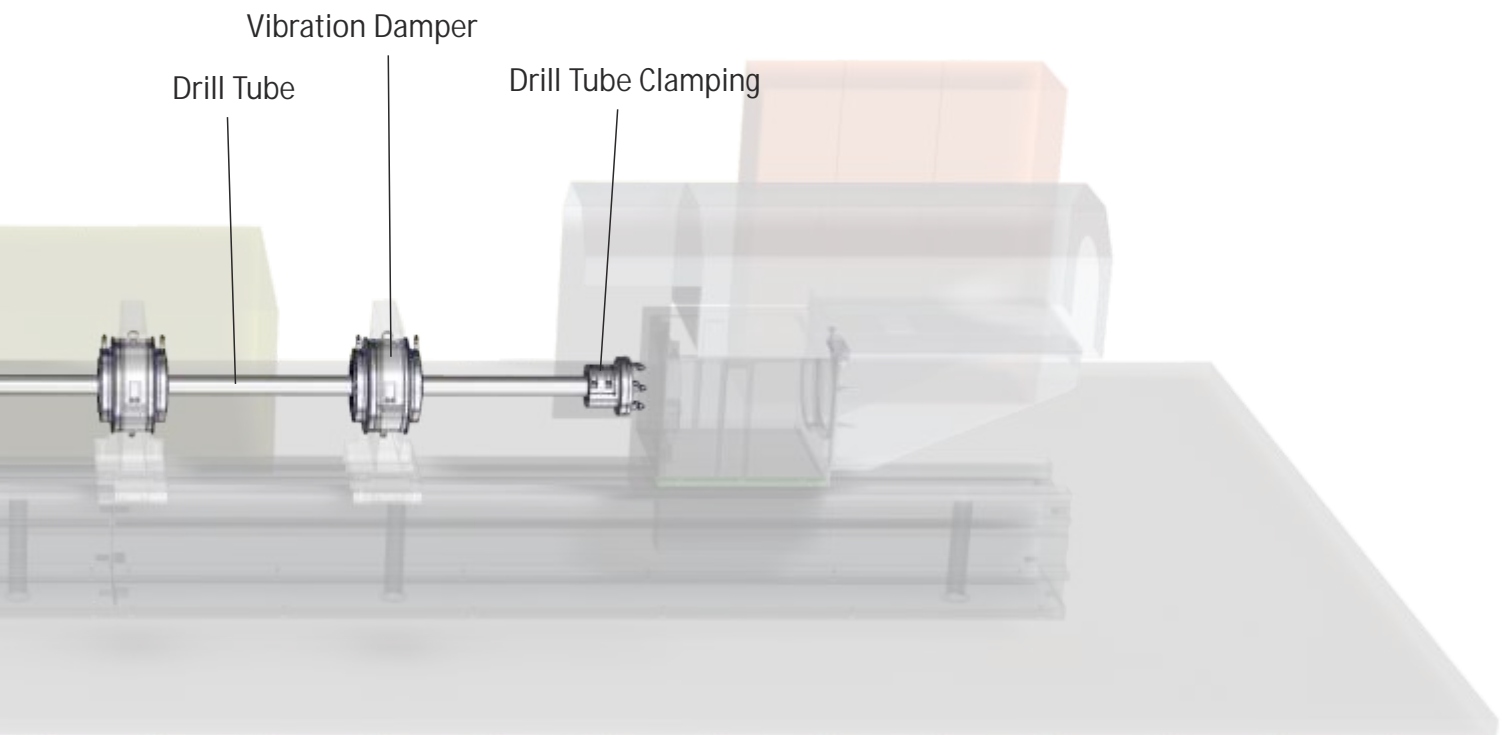
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## Overview delivery program







## BOZA Type 2210

Oil Pressure Head with non-rotating Workpiece Reception

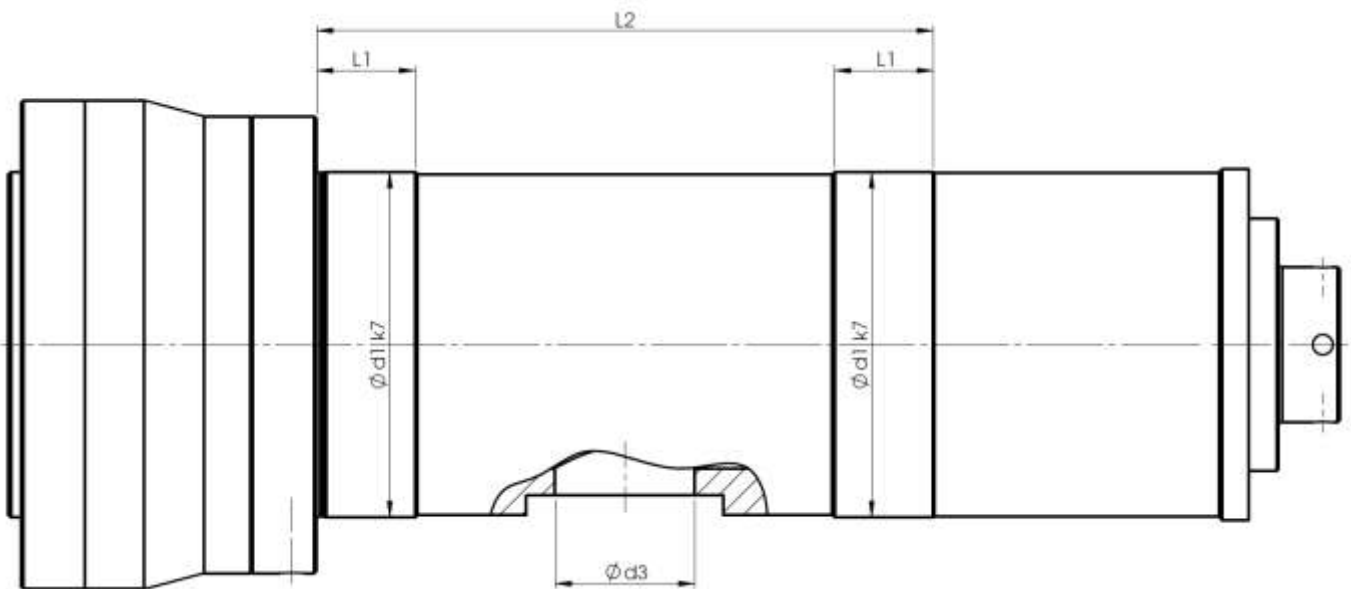
Oil pressure head with non-rotating reception cone for holding, centering and sealing the workpiece. The oil pressure head consists of a basic unit and variable components (workpiece reception / boring bush reception / boring bush / Reduction unit / boring bar guide).

Tool rotating. Workpiece shaped as required, however a cylindrical projection is required for clamping. When workpiece weight is very high, use roller steady or similar.



BOZA Size	Boring Range	Boring Bush Range
1	Ø 6,51 - Ø 18,00	01
2	Ø 18,01 - Ø 36,99	02
3	Ø 18,01 - Ø 56,99	02 / 03
4	Ø 37,00 - Ø 90,99	03 / 04 / 05
5	Ø 57,00 - Ø 134,99	04 / 05 / 06 / 07
6	Ø 91,00 - Ø 273,99	06 / 07 / 08 / 09
7	Ø 135,00 - Ø 293,99	08 / 09 / 10 / 11 / 12 / 13
8	Ø 270,00 - Ø 401,99	13 / 14 / 15 / 16

Minimum Outline Dimensions for BOZA Type 2210



BOZA 2210				
Size	$d1k7$	$d3$	$L2$	$L1$
1	80	G1"	250	30
2	80	G1"	250	30
3	100	G1"	250	30
4	140	G2"	250	40
5	180	G2"	250	40
6	230	G2"	250	62
7	355	G2½"	300	62
8	490	G2½"	354	70

Additional outline dimensions on request

Workpiece preparation

Chamfer: Length „L“ x 30°



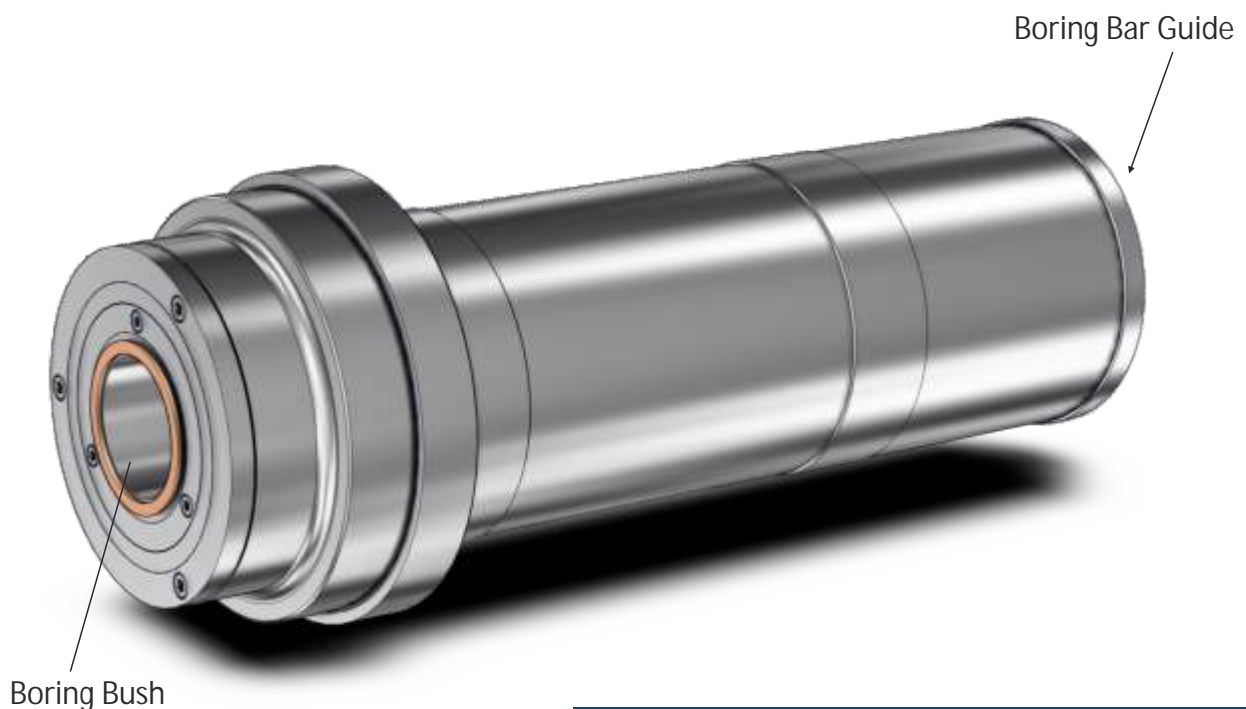
Clamping diameter	L
$\varnothing$ ... - $\varnothing$ 100	2
$\varnothing$ 100 - $\varnothing$ 300	3
$\varnothing$ 300 - $\varnothing$ ...	5

## BOZA Type 2220

Oil Pressure Head with non-rotating Workpiece Reception.

Oil pressure head with non-rotating flat seal (soft sealing ring or hardened annular cutting edge). The oil pressure head consists of a basic unit and variable components (boring bush reception / boring bush / reduction unit / boring bar guide).

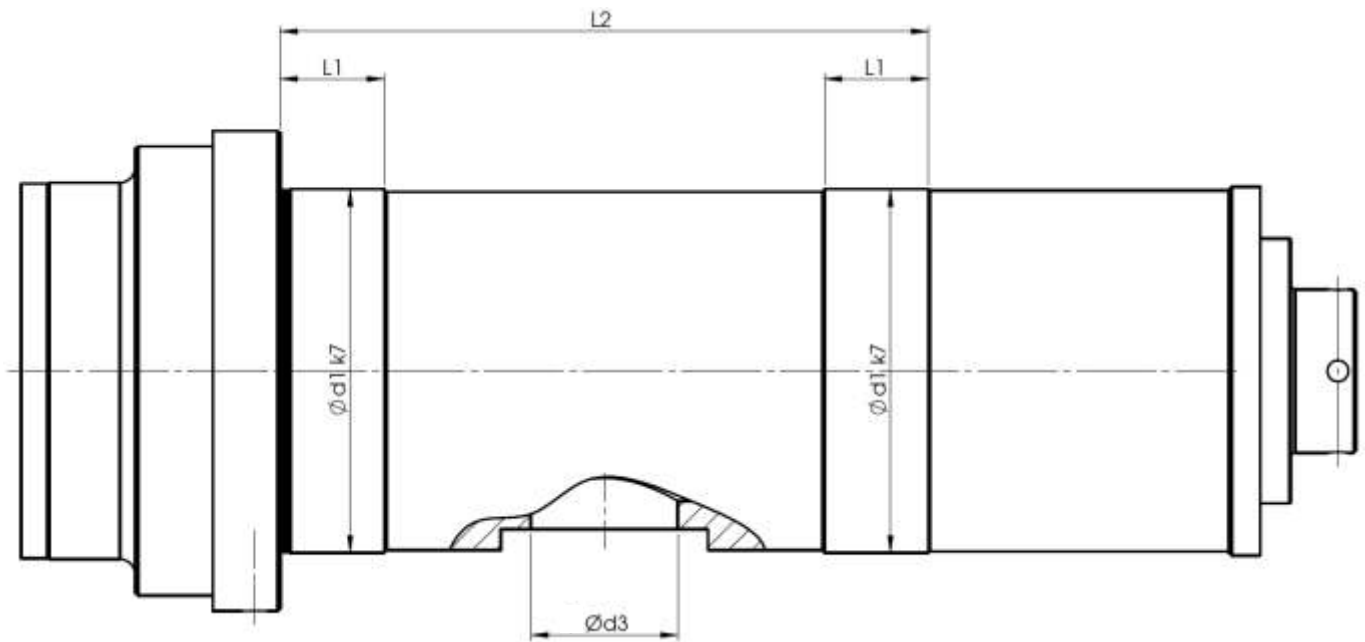
Tool rotates. Workpiece shaped as required, held in a jig on or outside of the machine. Bore starting surface must be flat.



BOZA Size	Boring Range	Boring Bush Range
1	Ø 6,51 - Ø 18,00	01
2	Ø 18,01 - Ø 36,99	02
3	Ø 18,01 - Ø 56,99	02 / 03
4	Ø 37,00 - Ø 90,99	03 / 04 / 05
5	Ø 57,00 - Ø 134,99	04 / 05 / 06 / 07
6	Ø 91,00 - Ø 273,99	06 / 07 / 08 / 09
7	Ø 135,00 - Ø 293,99	08 / 09 / 10 / 11 / 12 / 13
8	Ø 270,00 - Ø 401,99	13 / 14 / 15 / 16



### Minimum Outline Dimensions for BOZA Type 2220



BOZA 2220				
Size	$d1_{k7}$	$d3$	$L2$	$L1$
1	80	G1"	250	30
2	80	G1"	250	30
3	100	G1"	250	30
4	140	G2"	250	40
5	180	G2"	250	40
6	230	G2"	250	62
7	355	G2½"	300	62
8	490	G2½"	354	70

Additional outline dimensions on request

## BOZA Type 2250

Oil Pressure Head with rotating Workpiece Reception.

Oil pressure head with rotating workpiece reception cone for holding, centering and sealing the workpiece. The oil pressure head consists of a basic unit and variable components (workpiece reception / boring bush reception / boring bush / reduction unit / boring bar guide).

Tool rotating or stationary.

Workpiece rotationally symmetrical, rotating.

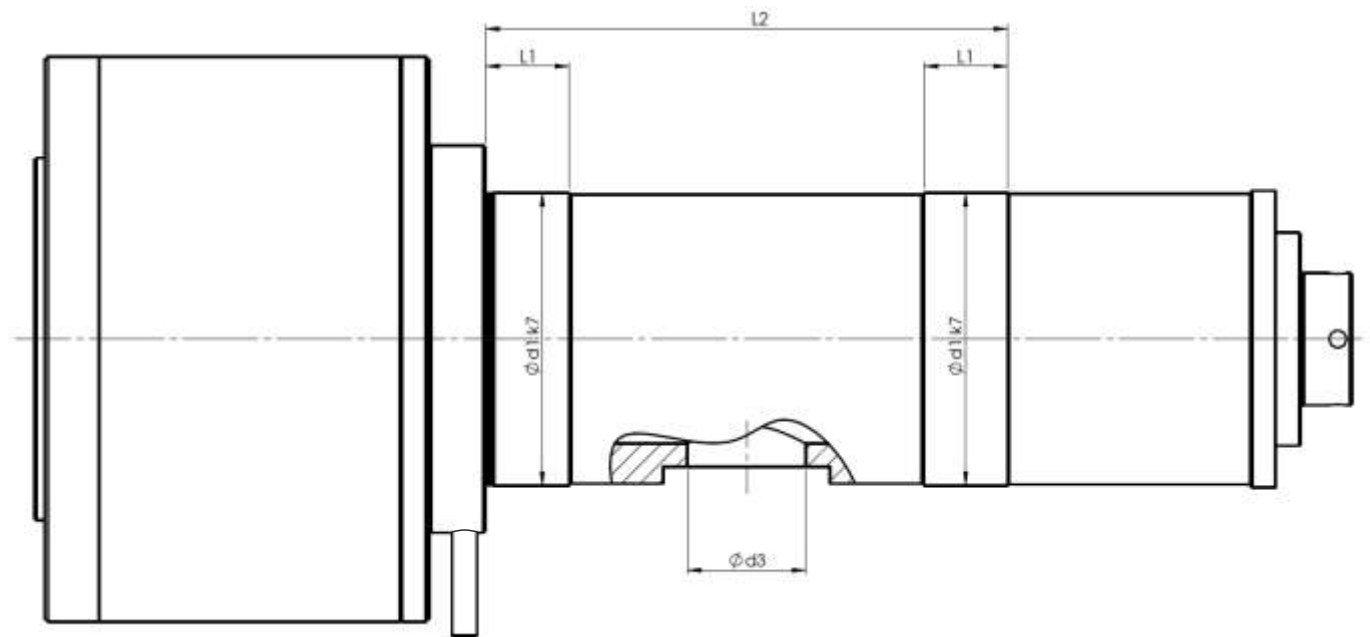
When workpiece weight is very high, use roller steady.



BOZA Size	Boring Range	Boring Bush Range
1	Ø 6,51 - Ø 18,00	01
2	Ø 18,01 - Ø 36,99	02
3	Ø 18,01 - Ø 56,99	02 / 03
4	Ø 37,00 - Ø 90,99	03 / 04 / 05
5	Ø 57,00 - Ø 134,99	04 / 05 / 06 / 07
6	Ø 91,00 - Ø 273,99	06 / 07 / 08 / 09
7	Ø 135,00 - Ø 293,99	08 / 09 / 10 / 11 / 12 / 13
8	Ø 270,00 - Ø 401,99	13 / 14 / 15 / 16



Minimum Outline Dimensions for BOZA Type 2250



BOZA 2250				
Size	d1 <sub>k7</sub>	d3	L2	L1
1	80	G1"	250	30
2	80	G1"	250	30
3	100	G1"	250	30
4	140	G2"	250	40
5	180	G2"	250	40
6	230	G2"	250	62
7	355	G2½"	300	62
8	490	G2½"	354	70

Additional outline dimensions on request

Workpiece preparation

Chamfer: Length „L“ x 30°



Clamping diameter	L
Ø ... - Ø 100	2
Ø 100 - Ø 300	3
Ø 300 - Ø ...	5

## BOZA Type 2270

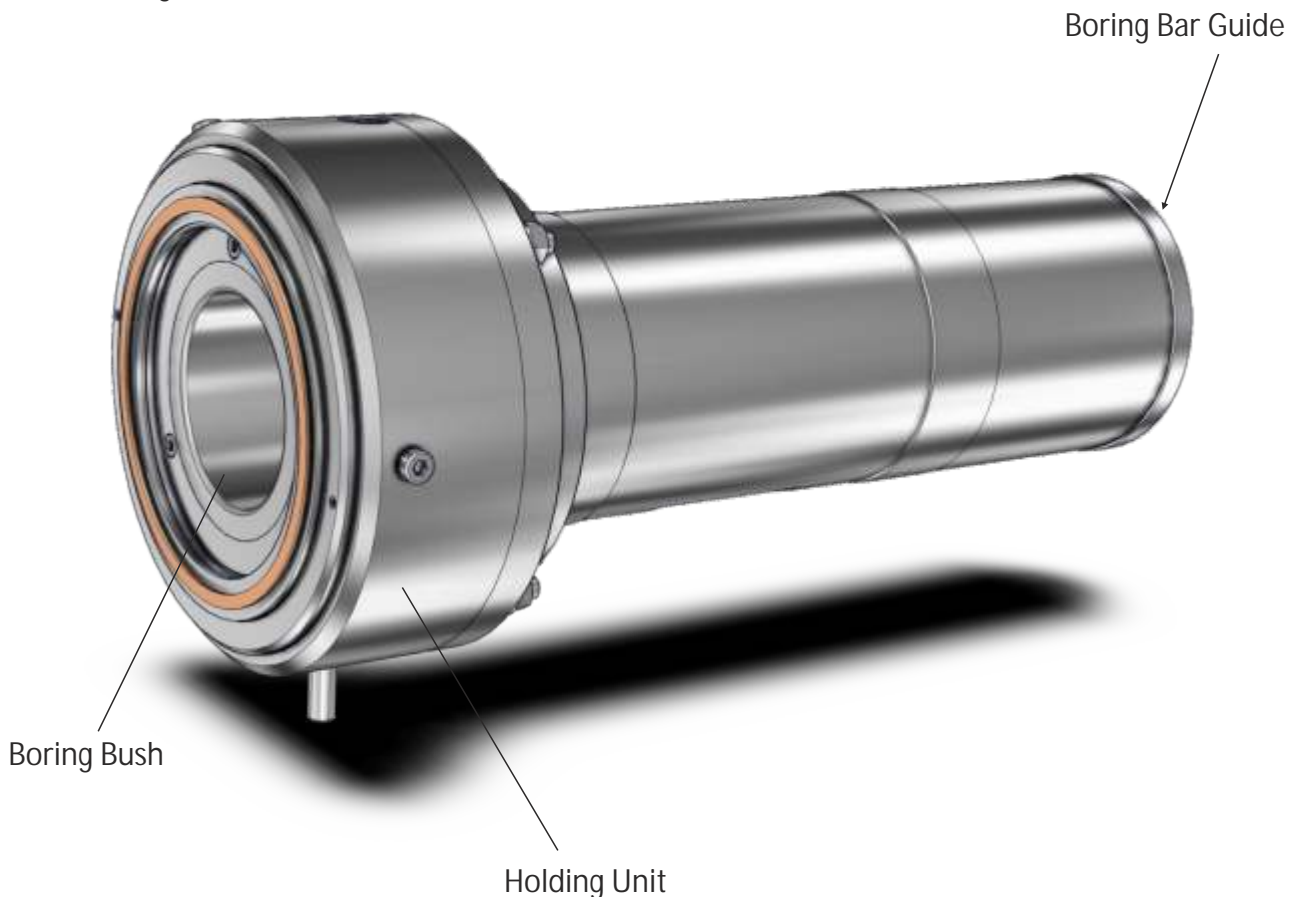
Oil Pressure Head for rotating Workpieces

Oil pressure head with rotating flat seal pressed against workpiece by pressure of cooling lubricant, capable of providing compensation for thermal expansion. The pressing force is generated by the oil pressure head. The oil pressure head consists of a basic unit and variable components (boring bush reception / boring bush / reduction unit / boring bar guide).

Tool rotating or stationary.

Workpiece rotationally symmetrical running in roller steadies.

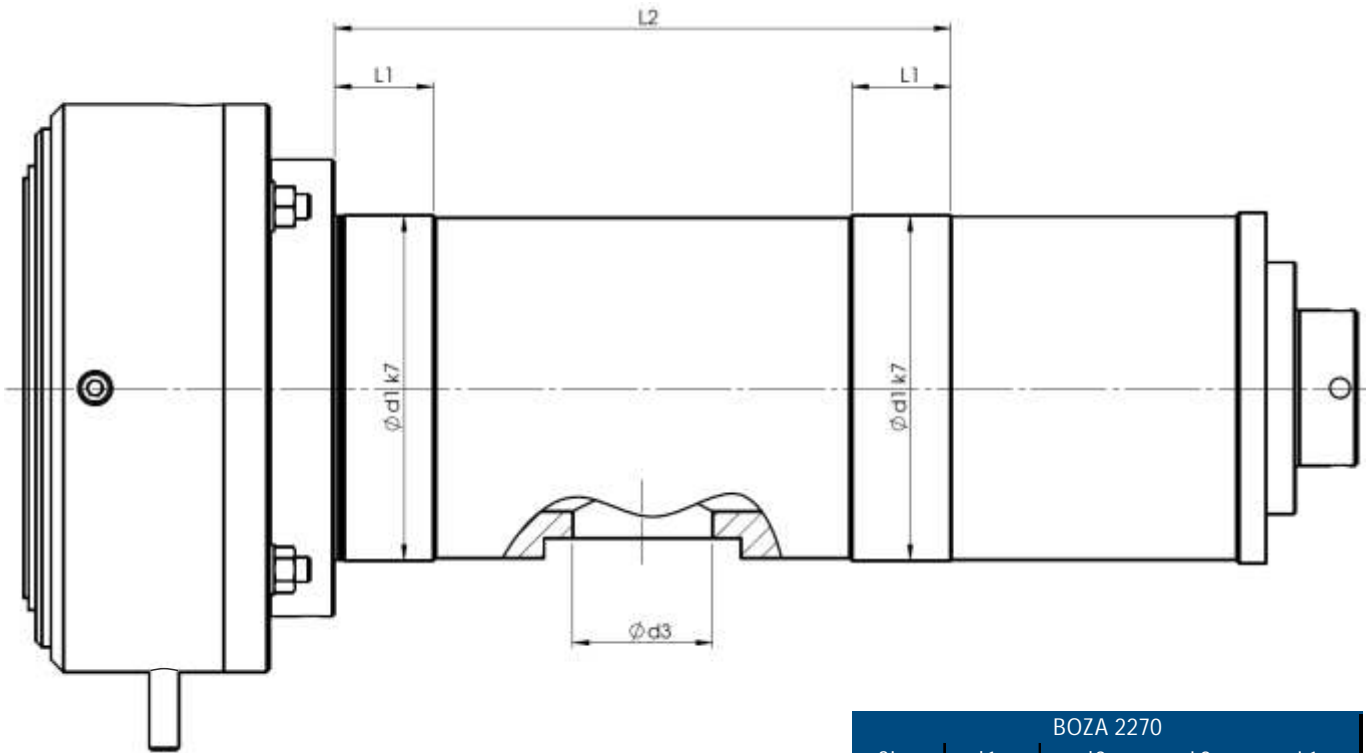
Bore starting surface must be flat.







Minimum Outline Dimensions for BOZA Type 2270



BOZA 2270				
Size	d1 <sub>k7</sub>	d3	L2	L1
1	80	G1"	250	30
2	80	G1"	250	30
3	100	G1"	250	30
4	140	G2"	250	40
5	180	G2"	250	40
6	230	G2"	250	62
7	355	G2½"	300	62
8	490	G2½"	354	70

Additional outline dimensions on request

BOZA Size	Boring Range	Boring Bush Range
1	Ø 6,51 - Ø 18,00	01
2	Ø 18,01 - Ø 36,99	02
3	Ø 18,01 - Ø 56,99	02 / 03
4	Ø 37,00 - Ø 90,99	03 / 04 / 05
5	Ø 57,00 - Ø 134,99	04 / 05 / 06 / 07
6	Ø 91,00 - Ø 273,99	06 / 07 / 08 / 09
7	Ø 135,00 - Ø 293,99	08 / 09 / 10 / 11 / 12 / 13
8	Ø 270,00 - Ø 401,99	13 / 14 / 15 / 16

## Accessories - BOZA 2210/2250



Workpiece Reception for BOZA Type 2210 - NON-ROTATING

BOZA Size	Reception Flange	Workpiece Reception (insert) max. Workpiece-Ø	Workpiece Reception (direct) max. Workpiece-Ø
1	-	-	70
2	-	-	80
3	Size 3	80	105
4	Size 4	80	140
5	Size 5	110	185
6	Size 6	135	220
7	Size 7	220	340
8	Size 8	350	480

Workpiece Reception for BOZA Type 2250 - ROTATING

BOZA Size	Reception Flange	Workpiece Reception (insert) max. Workpiece-Ø	Workpiece Reception (direct) max. Workpiece-Ø
1	-	-	70
2	-	-	100
3	Size 3	80	120
4	Size 4	105	165
5	Size 5	150	220
6	Size 6	190	270
7	Size 7	280	390
8	Size 8	360	580

Thick walled workpieces require special designed receptions.  
Please always request.



## Accessories - BOZA 2210/2220/2250/2270

Boring Bush and Boring Bar Guides  
for range Ø6,51 - 401,99



not for Type 2270

nor for Type 2270

BOZA Size	Boring Range	Boring Bush Range	Boring Bush Reception	Holding Unit	Reduction Unit for Boring Bar Guide	Boring Bar Guide for Drill Tube
1	Ø 6,51 - Ø 18,00	01	-	Size 1 to Range 01	-	6 - 15
2	Ø 18,01 - Ø 36,99	02	-	Size 2 to Range 02	-	16,5 - 30
3	Ø 18,01 - Ø 36,99	02	Size 3 to Range 02	Size 3 to Range 02	3 on 2	16,5 - 30
	Ø 37,00 - Ø 56,99	03	Boring Bush direct	Size 3 to Range 03	Boring Bar Guide direct	33 - 47
4	Ø 37,00 - Ø 56,99	03	Size 4 to Range 03	Size 4 to Range 03	4 on 3	33 - 47
	Ø 57,00 - Ø 74,99	04	Size 4 to Range 04	Size 4 to Range 04	Boring Bar Guide direct	51 - 75
	Ø 75,00 - Ø 90,99	05	Boring Bush direct	Size 4 to Range 05		
5	Ø 57,00 - Ø 74,99	04	Size 5 to Range 04	Size 5 to Range 04	5 on 3	33 - 47
	Ø 75,00 - Ø 90,99	05	Size 5 to Range 05	Size 5 to Range 05	5 on 4	51 - 75
	Ø 91,00 - Ø 110,99	06	Size 5 to Range 06	Size 5 to Range 06	Boring Bar Guide direct	82 - 118
	Ø 111,00 - Ø 134,99	07	Boring Bush direct	Size 5 to Range 07		
6	Ø 91,00 - Ø 110,99	06	Size 6 to Range 06	Size 6 to Range 06	6 on 4	51 - 75
	Ø 111,00 - Ø 134,99	07	Size 6 to Range 07	Size 6 to Range 07	6 on 5	82 - 118
	Ø 135,00 - Ø 148,99	08	Size 6 to Range 08	Size 6 to Range 08	Boring Bar Guide direct	130 - 154
	Ø 149,00 - Ø 173,99	09	Boring Bush direct	Size 6 to Range 09		
7	Ø 135,00 - Ø 148,99	08	Size 7 to Range 08	Size 7 to Range 08	7 on 5	82 - 118
	Ø 149,00 - Ø 173,99	09	Size 7 to Range 09	Size 7 to Range 09	7 on 6	130 - 154
	Ø 174,00 - Ø 209,99	10	Size 7 to Range 10	Size 7 to Range 10	Boring Bar Guide direct	166 - 274
	Ø 210,00 - Ø 233,99	11	Size 7 to Range 11	Size 7 to Range 11		
	Ø 234,00 - Ø 269,99	12	Size 7 to Range 12	Size 7 to Range 12		
	Ø 270,00 - Ø 293,99	13	Boring Bush direct	Size 7 to Range 13		
8	Ø 270,00 - Ø 293,99	13	Size 8 to Range 13	Size 8 to Range 13	8 on 7	262 - 274
	Ø 294,00 - Ø 329,99	14	Size 8 to Range 14	Size 8 to Range 14	Boring Bar Guide direct	286 - 382
	Ø 330,00 - Ø 365,99	15	Size 8 to Range 15	Size 8 to Range 15		
	Ø 366,00 - Ø 401,99	16	Boring Bush direct	Size 8 to Range 16		

Special designed Bushes:

- Extra long Boring Bush



- Guide Bush (Boring Bush in unhardened design)



- Boring Bush with Sealing Ring (only for BOZA 2220)



- Boring Bush with Knife Edge Seal (only for BOZA 2220)



## Special designed Oil Pressure Heads

BOZA for Boring-Ø > 400mm - ROTATING



BOZA 500  
for Boring-Ø 300 - 500 mm

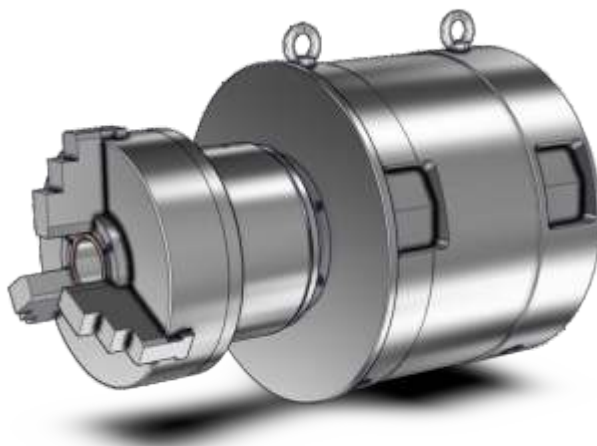


BOZA 800  
for Boring-Ø 400 - 800 mm



BOZA 1000  
for Boring-Ø 500 - 1000 mm

BOZA with Chuck



For additional information please contact us



## Lanterns and Back Holding Units

### Lantern TYPE 3210 - rotating

Lantern with rotating clamping cone or chuck for holding, centering and sealing of the workpiece. The lantern consists of a basic unit and variable components (Workpiece reception / boring bush reception / boring drill bush / Reduction Unit / boring bar guide). Tool rotating or stationary.

Workpiece rotationally symmetrical.

When the lantern is very long and workpiece weight very high, use roller steady.

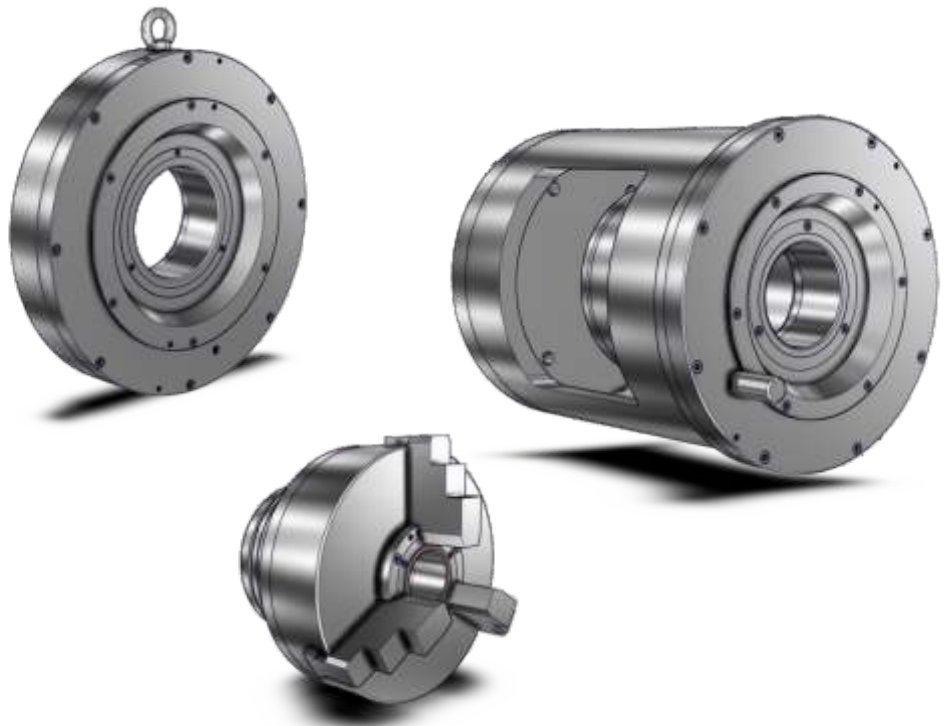
### Back Holding Unit TYPE 3230 - non-rotating

Counter-holding unit with non-rotating clamping cone or chuck for holding, centering and sealing of the workpiece. The counter-holding unit consists of a basic unit and variable components (workpiece reception / boring bush reception / boring bush / Reduction unit / boring bar guide).

Tool rotates.

Workpiece shaped as required, however with cylindrical appendage for clamping. When workpiece weight is very high, use roller steady.

BOZA Size	Boring Range
1	Ø 6,51 - Ø 18,00
2	Ø 18,01 - Ø 36,99
3	Ø 18,01 - Ø 56,99
4	Ø 37,00 - Ø 90,99
5	Ø 57,00 - Ø 134,99
6	Ø 91,00 - Ø 273,99
7	Ø 135,00 - Ø 293,99
8	Ø 270,00 - Ø 401,99



## Vibration Damper TYPE 3350 / 3450 / 3550

Manual and Hydraulically operated design

Vibration dampers guide and stabilize the boring bar. Use of such dampers reduces torsion and flexural vibration and prevents buckling.

Vibration dampers rotate during operation and can be opened and closed during machining. Manual dampers require free access during machining.

Hydraulic dampers are used in automated machines and can be controlled by a suitable machine control or separately.

Manually operated design  
TYPE 3350



Hydraulically operated design  
TYPE 3450



Hydraulically operated design  
TYPE 3550

(for pushed and pulled machining  
without conversation)

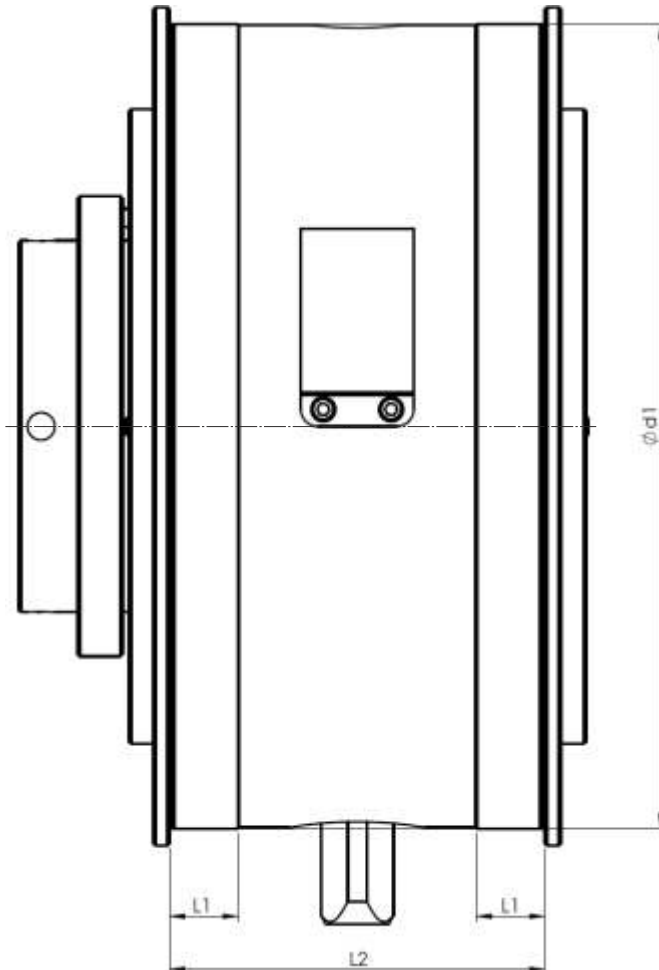


Drill Tube ranges, Sizes and Connection dimensions on request.



## Vibration Damper TYPE 3350 manual design

Minimum outline dimensions

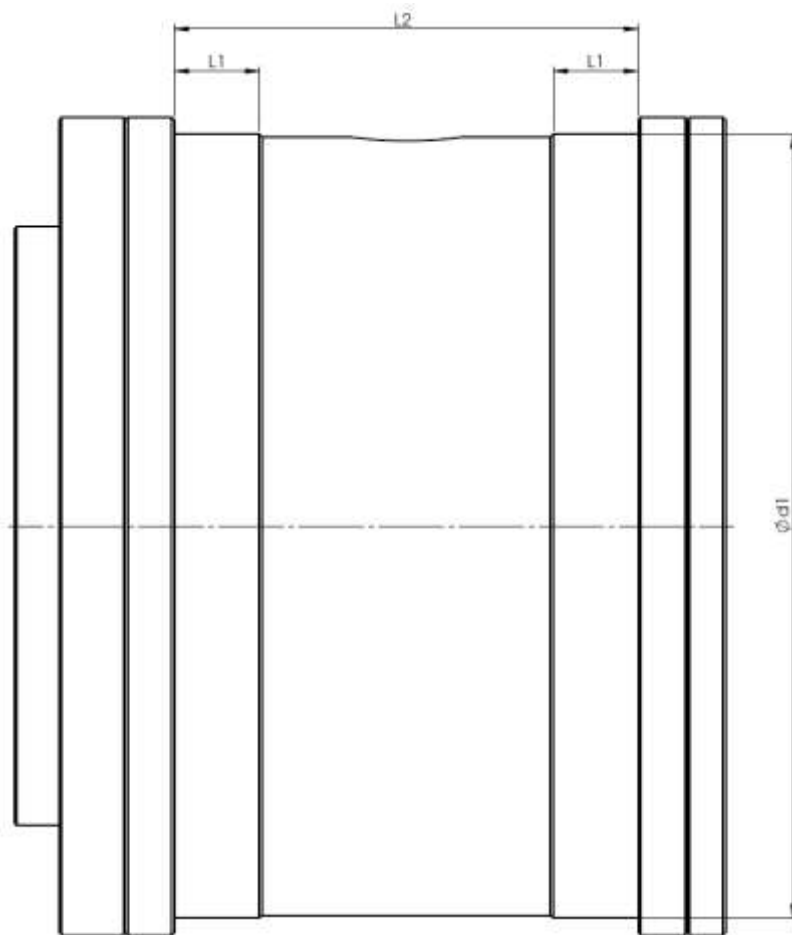


SD - Type 3350				
Size	Drill Tube	$d_{1k7}$	L2	L1
2,0	16,5 - 30	180	135,5	30
3,0	16,5 - 47	280	165,5	
3,5	30 - 62			
4,0	33 - 75			
4,5	43 - 94			
5,0	56 - 118	355	200,5	
6,0	68 - 154			
6,5	94 - 190	490	200,5	
7,0	118 - 226			
7,5	130 - 286	560		

Additional outline dimensions on request

## Vibration Damper TYPE 3450/3550 hydraulically design

Minimum outline dimensions



SD - Type 3450/3550				
Size	Drill Tube	$d1_{k7}$	L2	L1
2,0	16,5 - 30	180	135,5	30
3,0	16,5 - 47	280	165,5	
3,5	30 - 62			
4,0	33 - 75			
4,5	43 - 94			
5,0	56 - 118	355	200,5	
6,0	68 - 154			
6,5	94 - 190	490	200,5	
7,0	118 - 226			
7,5	130 - 286			

Additional outline dimensions on request





## Hydraulic Power Unit

For Hydraulically Vibration Dampers and Tools



Source: HAWE Hydraulik

## Boring Bar Clamping Unit TYPE 3270

Collet Chuck and Clamp Collar design

### Collet Chuck Boring Bar Clamping Unit

Maximum Drill Tube - Ø 47,00 mm

Collet chuck boring bar clamping units are used for small boring bars. Collet chucks to match the required diameter are available on request. The boring bar must be clamped to ensure sufficient coolant and chip discharge.



### Clamp Collar Boring Bar Clamping Unit

From Drill Tube - Ø 51,00 mm

Split bushes are used to exert pressure on the required boring bar diameter. Reducer shells with sealing plates available on request.



Drill Tube ranges, Sizes and Connection dimensions on request.



## Drill Tubes

Thin/Thick walled Drill Tubes with BTA-Thread Type 0010/0300

Thin/Thick walled Drill Tubes with STS-Thread Type 0150/0450

The standard version boring bars are provided with a flat, "single start" male thread (BTA thread) on one end. The threaded end is laid out as a "wear element" on Type 0300. Other thread versions are also possible. They are available as single or multiple piece versions. The maximum length for one-piece boring bars is 6.0 m.

### Thick walled

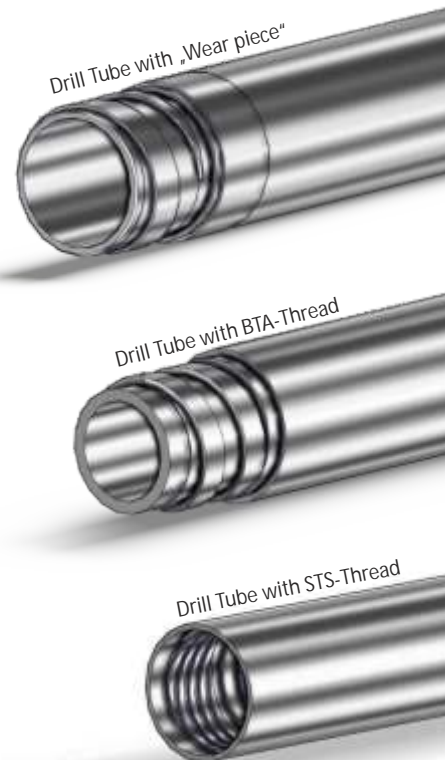
Drill Tube	Drill Tube Inner-Ø
39	24
43	27
47	30
51	33
56	36
62	42
68	48
75	55
82	62
94	68
106	78
118	88
130	100
142	112
154	122
166	132
178	144
190	154
202	166
214	178
226	190
238	202
250	214
262	226
274	238
286	250
298	262
310	274
322	276
334	298
346	310

From-Ø 226 mm Drill Tubes are available with a flanged joint..  
When boring with larger Drill Tubes are recommended Inner Chip Tubes.

### Thin walled

Drill Tube	Drill Tube Inner-Ø
13	8,5
14	9
15	10
* 16	10,5
# 16,5	11
* 17	11,5
18	12
20	13
22	14
24	15,5
26	17
28	18,5
30	20
33	23
36	25,5
39	28
43	31
47	35
51	39
56	43
62	48
75	59

\* only available with STS-Thread.  
# only available with BTA-Thread.



### Additional Accessories:

Thread Adaptor



„Wear piece“





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Our program:

