Tooling technology

BENZ LinTec broaching units
+ for turning centers / lathes
+ for machining centers

METAL MACHINING

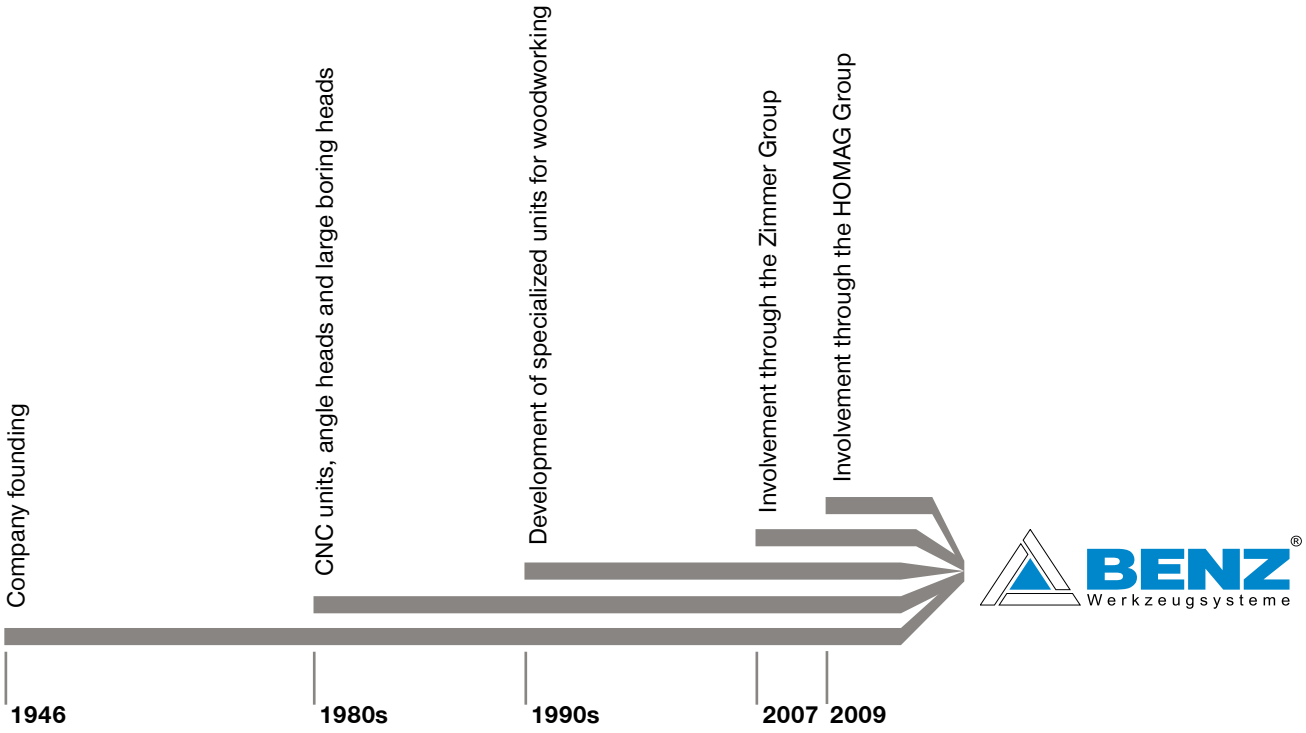
www.benz-tools.com

BENZ® Werkzeugsysteme

AT BENZ WERKZEUGSYSTEME, OUR MAXIM, "INNOVATION. PRECISION. PASSION." IS FAR MORE THAN JUST A MARKETING FORMULA. RATHER, IT DESCRIBES THE CORE GOALS OF OUR BUSINESS WHILE ALSO OUTLINING THE REASONS WHY WE HAVE BEEN ABLE TO COMPETE IN THE MARKET SUCCESSFULLY WITH TOOL SYSTEMS FOR WOODWORKING, METAL MACHINING AND COMPOSITE MATERIAL PROCESSING FOR MORE THAN 30 YEARS.

INNOVATIONS ARE IMPORTANT TO US. BUT WE ALSO RECOGNIZE THAT THEY CAN BE SUCCESSFUL ONLY IF THEY PRECISELY MEET THE NEEDS OF OUR CUSTOMERS. THIS IS WHY WE HAVE MAINTAINED A STRICT FOCUS ON OUR CUSTOMERS FOR MANY YEARS. WE ENSURE THAT OUR DEVELOPMENTS AND INNOVATIONS SIMPLIFY YOUR PRODUCTION PROCESSES AND LOWER YOUR MANUFACTURING COSTS - AND ULTIMATELY IMPROVE YOUR COMPETITIVENESS AS A RESULT.

BENZ GMBH
WERKZEUGSYSTEME



BENZ PRECISION PRODUCTS PROVIDE REFINED SOLUTIONS, INNOVATIVE TECHNOLOGY AND THE HIGHEST LEVEL OF QUALITY. WHAT IS THE SECRET TO THIS SUCCESS? OUR EMPLOYEES AND THEIR INVALUABLE EXPERTISE MAKE THE DIFFERENCE.

Innovation. With an eye on what is currently within the bounds of feasibility, we strive to always make use of innovative technologies. And we keep in close contact with our customers to ensure we already know today what our customers will need tomorrow. Technical progress is ingrained into our very identity, which means you can always find smart, detailed solutions in our product range.

Precision. We ensure our products have the highest level of precision and reliability. This is vital in our industry. Our customers also rely on absolute precision during production—and need to be able to put all their trust in us. But production is not the only area where we strive for precision. We also seek minimal tolerances and maximum accuracy in other areas as well—from development to sales to delivery.

Passion. BENZ precision products are composed of a vast array of different individual parts. They are the result of great care that starts in the design phase and even includes the selection of raw materials. Primarily, however, they are the expression of our employee's experience and passion to do good work. We are tool specialists through and through and we are willing to move mountains to reach the perfect solution and to ensure the satisfaction of our customers.

PRODUCT GROUPS

TOOLING AND MACHINE TOOLING TECHNOLOGY

TOOLING TECHNOLOGY








LIVE TOOLS/ TOOL HOLDERS

+ Radial heads 90°
+ Radial heads ≠ 90°
+ Axial heads
+ Swivel heads
+ Multi-spindle heads
+ Broaching units
+ Rotating tool holders
+ Static tool holders

Components. Our comprehensive tool concepts for turning centers and milling centers are ideal for nearly every application. Providing a technological advantage is our goal.

Specific to the customer. Our modular approach enables customized configurations.

Systems. We develop special customer-specific tools for OEM and end customers on request.

EXCHANGEABLE UNITS

+ Angle heads 90°
+ Angle heads ≠ 90°
+ Swivel heads
+ Multi-spindle heads
+ Broaching units
+ High-speed spindles

Knowledge and experience. Our knowledge of the metalworking industry and decades of development partnership make us ideal for new tasks anywhere in the world.

Components. We deliver a vast array of standard components from stock and develop innovative, customized systems for OEM and end customers.

Variety. Whether in machining centers in the automotive, aerospace or wind energy industries, units from Benz can be used anywhere. Numerous customers choose us as their systems and innovation partner.

EXCHANGEABLE UNITS

+ Angle heads 90°
+ Swivel heads
+ Multi-spindle heads
+ Multi-axis heads
+ Sanding units
+ Floating head units

For any application. Cost-effectively process and machine wood, composites and aluminium: We provide series production angle heads for drilling, milling, sawing and grinding in addition to other units for special applications.

From basic to high-end. Benz units are available in a variety of performance classes, making them ideal for everything from light machining to high-performance continuous operation.

Systems. We have the solution for your special applications: Customized Benz units for machining centers. Put us to the test!

METAL

WOOD/COMPOSITE MATERIALS

MACHINE TOOLING TECHNOLOGY

MULTI-SPINDLE HEADS AND LARGE DRILL HEADS

+ Large angle heads
+ Large drill heads
+ XXL multi-spindle heads

Development partner. We accompany you from brainstorming to inspection of the final machine, always to your expectations. Our assortment ranges from compact heads to XXL units.

Systems. Benz stands for high-end solutions in the fields of machine tooling technology, specialty solutions, custom assemblies and mechanical modules. We manufacture and configure multiple-spindle and large-angle heads as well as large drill heads.

Components. Attachment units complete our range.

SYSTEM TECHNOLOGY

+ Multiple-spindle drill heads
+ Motor spindles
+ Motors
+ 5-axis technology
+ C-axes
+ Swivel axes
+ Rotary distributors
+ Z-axes

Components. Our range includes standard products in an assortment of shapes and sizes.

The perfect addition. Our system additions provide you with even more efficiency. Perfect your existing solutions with Benz products!

Systems. We develop the technology of tomorrow. Your individual requirements for the efficiency of your machine tools and the suitability of the tools in use provide our benchmark for new, innovative solutions.

SERVICE

+ Repair service
+ ExpressService
+ Customized crash package
+ Preventive maintenance
+ Spare part management
+ Global service
+ Service hotline

Do not lose a second. Speed is the order of the day when unexpected breakdowns occur. Our service center ensures Immediate assistance around the world. We ensure your machine has as little downtime as possible.

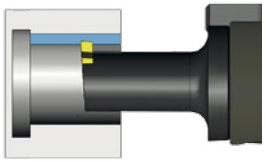
Service quality. We guarantee top service quality reflecting our expertise as a manufacturer.

Foresight. We go one step further: Preventive maintenance, customized crash packages and our spare part management service ensure you have the best setup to face any emergency. We look to the future to keep you at your peak.

TOOLING TECHNOLOGY
METAL MACHINING

LIVE TOOLS
EXCHANGEABLE UNITS

BENZ LINTEC SHAPING TECHNOLOGY
IN OVERVIEW



BENZ LINTEC
SHAPING TECHNOLOGY

1 Page 8

BROACHING UNITS
TURNING CENTERS

2 Page 17

BROACHING UNITS
MACHINING CENTERS

3 Page 27

EQUIPMENT VARIANTS

4 Page 38

ACCESSORIES

5 Page 40

SERVICE

6 Page 42

PLEASE CHECK:

INQUIRY FORM

Page 44

BENZ LINTEC
SHAPING TECHNOLOGY

▶ RESOURCE-SAVING PRODUCTION FOR GROOVES AND SPECIAL PROFILES

Design competitive processes to be more cost-effective
Specialized production workflows can be optimized by integrating auxiliary units into machine tools. The integration of broaching units into a production process is an ideal example of how you can avoid complicated and expensive changeover and retooling processes all the way to complete machining. These auxiliary units make it possible to produce a wide assortment of forms and profiles, particularly in cases where the geometric conditions at the workpiece mean the only viable machining variant is a keyway broaching or push slotting operation. The driven broaching unit converts the rotational movement of the machine spindle into a pushing movement at the plunger. For the static push-type fixture, the machine fully handles the individual movements of the cutting process.

As the user, you increase the time your machine is operating and adding value to your products. You also contribute to a production process that saves energy and extends the service life of your machine. Your machine and production costs will thank you.

The broaching auxiliary unit keeps your investment costs extremely low compared to alternatives such as purchasing a conventional broaching machine. In addition, you are no longer reliant on external suppliers. The throughput times in your production process decrease, since subcontracting machining steps and internal retooling on other machine tools are no longer necessary.

Investment cost comparison

Conventional process

BENZ LinTec broaching unit

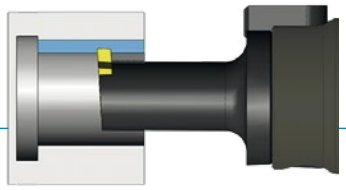
▶ TYPE OVERVIEW

As the leading company in shaping technology, BENZ provides units for all common CNC lathes and machining centers. Receive the benefits of our years of experience for your specific application.

TURNING CENTERS		MACHINING CENTERS		
BENZ LinA - driven		BENZ LinA - driven		BENZ LinS - static
				
Axial	Radial	Axial	Radial	Axial
+ Standard + Short stroke	+ Standard + Short stroke + Long stroke + Fixed angle		+ Standard + Short stroke + Long stroke + Fixed angle*	

*On request

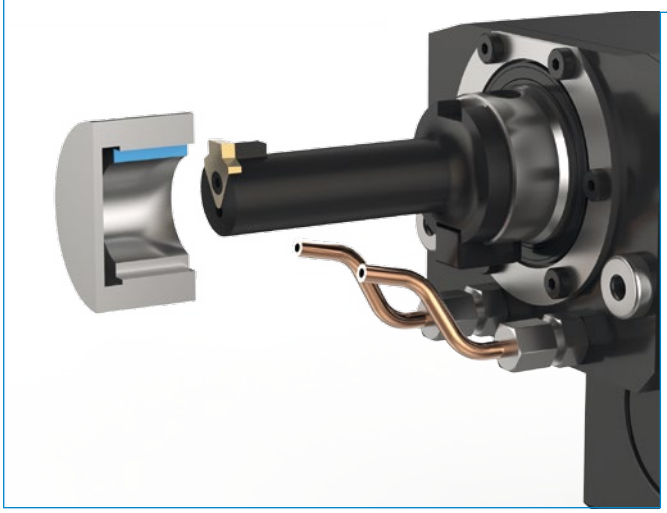
▶ TECHNOLOGY ADVANTAGES



- **Cost-effective manufacturing of a vast array of forms and profiles (pre-processing and finishing)**
  This includes grooves, internal toothing, external toothing, hexagon sockets, Torx, special profiles, etc.
- **Reduced retooling times and costs**
  Complete machining of workpieces in just one setting gives you a leaner production process and increases production speed.
- **Increase in efficiency**
  Your productivity increases thanks to a reduction in machine operating time and downtime.
- **Energy and resource-saving production**
  The cutting and lift-off function is carried out by the broaching unit and not by the machine. All of the kinematics of the cutting process are integrated into the driven broaching unit. No heavy machine components are moved for removing material.
- **Low investment costs**
  The broaching unit is an auxiliary unit for your machine tool. There is no need to purchase separate machines, such as a broaching machine.
- **Utilization of existing machine functions**
  The broaching unit uses pre-existing machine functions, such as a turret drive or the C-axis functionality of the main spindle.

BENZ LINTEC
SHAPING TECHNOLOGY

▶ INTERNAL AND EXTERNAL PROCESSING

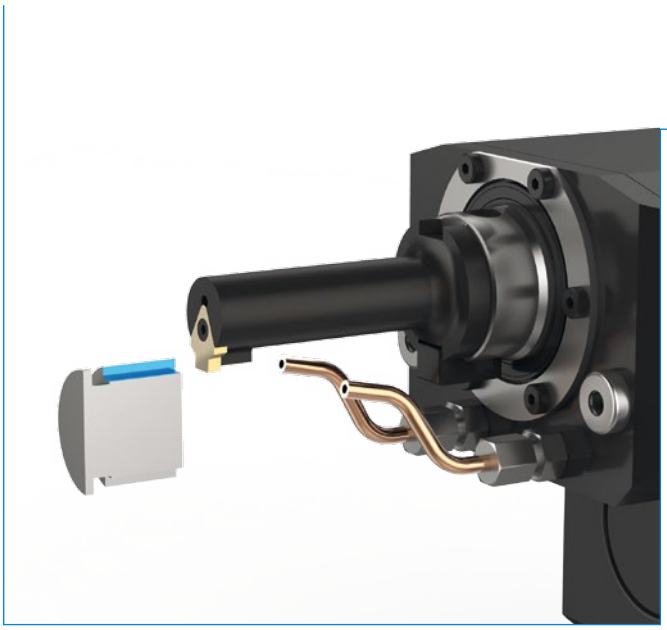


2 clamping holders

▶ **Internal machining**
Special clamping holders are used for internal machining of workpieces.

1 clamping holder

▶ **Internal machining**
A clamping holder with two opposing positioning grooves is used for the internal machining of workpieces. The clamping holder is suitable for internal and external machining.



2 clamping holders

▶ **External machining**
A special clamping holder is used for the external machining of workpieces.

1 clamping holder

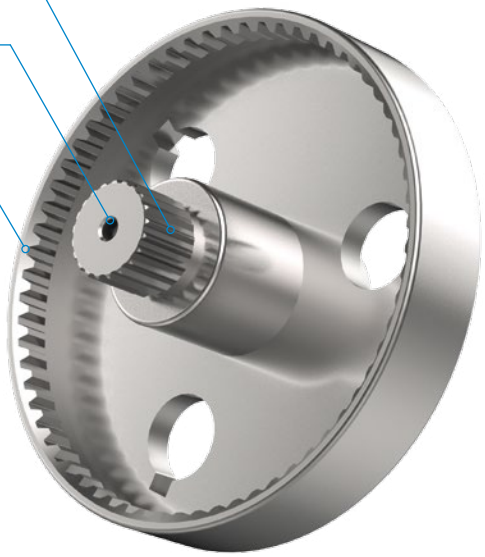
▶ **External machining**
External machining does not require a separate clamping holder. The same clamping holder is simply rotated by 180° and inserted into the broaching unit.

▶ PROCESSING TYPES

Splines

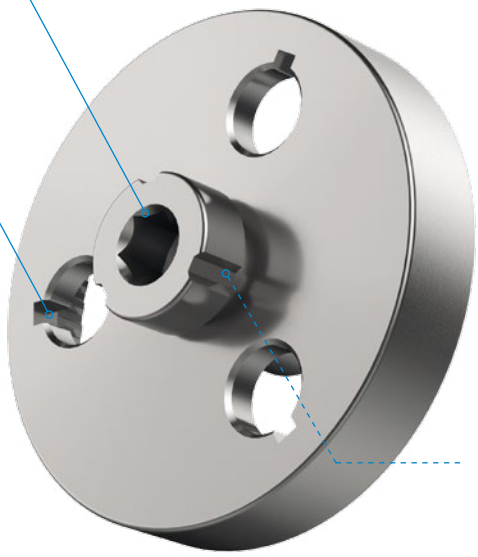
Torx

Involute toothing
(gears/shafts)



Hexagon socket

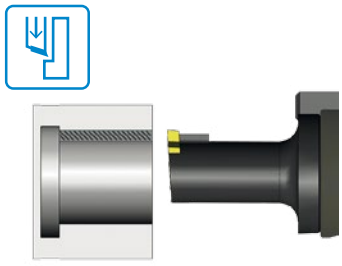
Groove



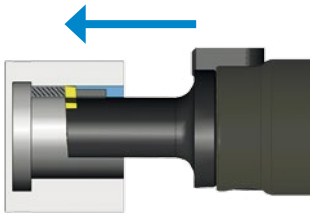
Other
special profiles

BENZ LINTEC
SHAPING TECHNOLOGY

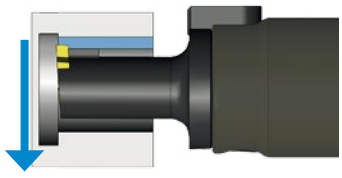
▶ THE PRINCIPLE BEHIND THE SHAPING/BROACHING PROCESS



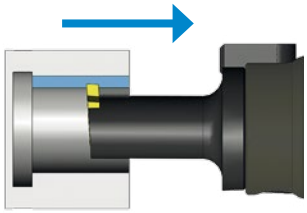
▶ **Moving to the start position**
Move with the cutter in the X-axis and Z-axis at the desired starting dimension.



▶ **Cutting movement**
The cutter pushes forward into the workpiece and begins cutting.



▶ **Integrated lift-off function**
The broaching unit lifts up after the shaping process. It features an integrated lift-off device.

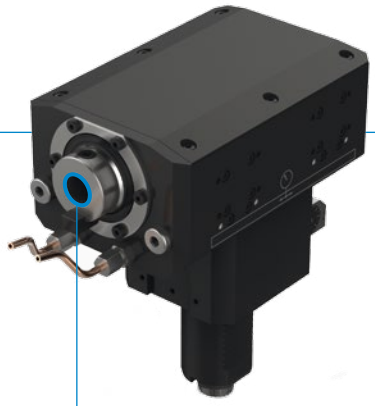


▶ **Return stroke as idle stroke**
The non-contact return motion during the idle stroke prevents wear and prevents the cutter from breaking during the return motion.

▶ With the X-axis providing continuous feed, the cycle repeats until the desired groove depth has been reached.

i For the BENZ LinS static fixture, the shaping process and the individual motions have to be performed entirely by the machine.

▶ MODULAR QUICK-CHANGE INTERFACE



- **High flexibility**
  thanks to modular design
- **High stiffness**
  thanks to planar support
- **Simple handling**
  thanks to easy operation
- **Quick tool change**
  Clamping holder securing using inclined plane and clamping screw
  Clamping holder can be preset outside the machine
- **High repeating accuracy**
  even across several tool changes

▶ EXPLANATION OF SYMBOLS AND ABBREVIATIONS

Symbol	▶ General specifications
Services	**Service** Services, such as repair, preventive maintenance, etc.
Information	**Important information** Caution! Important note. Please carefully read these. **Videos** Product/function explanations using videos
Weight	**Weight (in kg)** Approximate weight information (for HSK 63). The weights differ depending on the desired drive cone.
Shapes	**Serration**, **Torx**, **Involute toothing**, **Hexagon socket**, **Groove**, **Other**
Turret	**Star turret**, **Disc turret**
Function	**Shaping principle/process** Functional principle behind the broaching unit

▶ **Abbreviations**

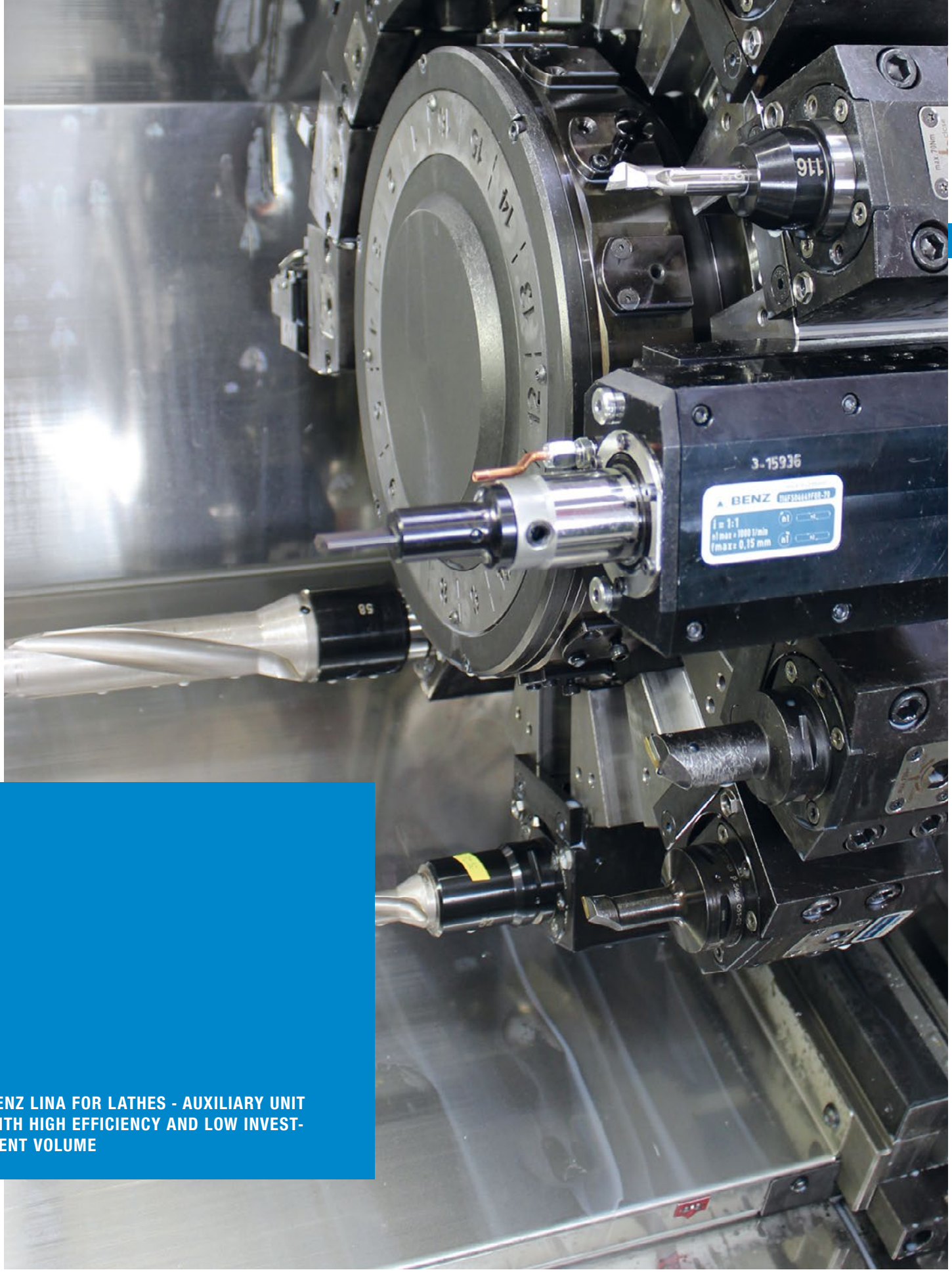
p.	Page
max.	Maximum

Special custom solutions

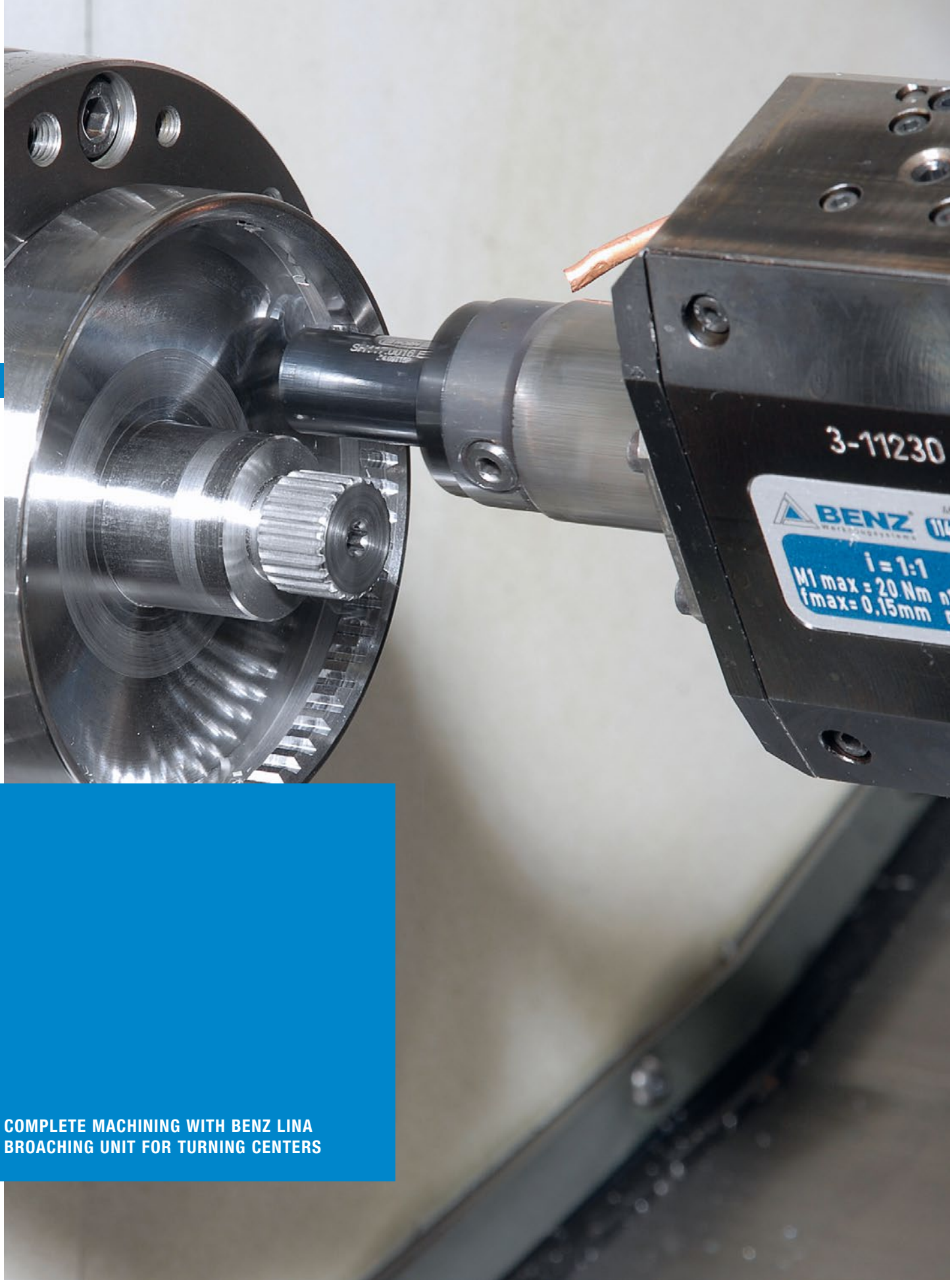
Products shown in dashed lines represent solutions adapted for a specific customer

Alignment option for clamping holder

This equipment variant comes standard for this unit.
See p. 38



BENZ LINA FOR LATHES - AUXILIARY UNIT WITH HIGH EFFICIENCY AND LOW INVESTMENT VOLUME



COMPLETE MACHINING WITH BENZ LINA BROACHING UNIT FOR TURNING CENTERS

BROACHING UNITS FOR TURNING CENTERS
IN OVERVIEW

BENZ LINA - DRIVEN

TECHNICAL INFORMATION
System design 18

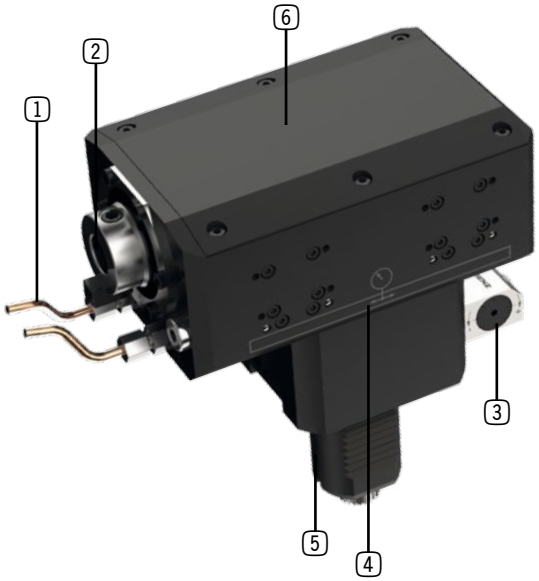
RADIAL
Variants/Technical features 20

RADIAL, ANGLED
Variants/Technical features 22

AXIAL
Variants/Technical features 24

BROACHING UNITS FOR TURNING CENTERS
SYSTEM DESIGN

▶ BENZ LINA (RADIAL)



1 **Coolant nozzle**
2 **Tool insert**
- For holding the clamping holder

3 **Alignment system**
- For aligning driven tools

4 **Alignment area**
- For aligning driven tools

5 **Base holder (adjusted)**
- Adjusted for the turret type
- Wide variety of drive variants and shanks available

6 **Permanent grease lubrication**
- Lubrication for the life of the tool with no need to re-lubricate

SEMI-MODULAR DESIGN

- ▶ Broaching unit
- ▶ Base holder (adjusted)

The principle behind the shaping/broaching process
See p. 12

Optional: Equipment variants

STROKE COUNTER

p. 38

ALIGNMENT OPTION FOR CLAMPING HOLDER*

p. 38

Videos

▶ **BENZ LinA - in use**
Scan the adjacent QR code with a smartphone and see a demonstration of the BENZ LinA in action. Alternatively, you can visit our YouTube channel to view the video: www.youtube.com/BENZWerkzeugsysteme

*Depending on the broaching unit type

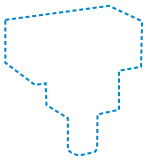
▶ TYPE OVERVIEW

▶ BENZ LinA - driven

D = Axial type
F = Radial type

- ▶ **S** Standard stroke
- ▶ **SS** Short stroke
- ▶ **SL** Long stroke
- ▶ **FIX** Angled (≠90°)

▶ **DS**	Axial type	Standard stroke
DSS	Axial type	With short stroke
▶ **FS**	Radial type	Standard stroke
FSS	Radial type	With short stroke
FSL	Radial type	With long stroke
▶ **FS-FIX**	Radial type, angled (≠90°)	Standard stroke
FSS-FIX	Radial type, angled (≠90°)	With short stroke
FSL-FIX	Radial type, angled (≠90°)	With long stroke



Trifix®

Note:

- ▶ The products displayed in this catalog are standard components. We would be happy to develop a suitable solution together with you to meet your specific requirements.
- ▶ Delivery does not include equipment variants or accessories. Please order these separately at your preferred cutting insert manufacturer.
  We offer starter kits consisting of a broaching unit and predefined clamping holders to help get you started with your shaping operation quickly.
- ▶ Trifix®: Units for Trifix® turrets including fixed flange connection are available.

BROACHING UNITS FOR TURNING CENTERS
BENZ LINA - RADIAL

▶ PRODUCT IN OVERVIEW

- **max. groove width** 8-10 [mm]
- **Ratio** 1:1
- **max. feed per stroke** 0.15 [mm]
- **max. speed** 1,200 [rpm]

▶ TYPE

FS **FSS** **FSL**

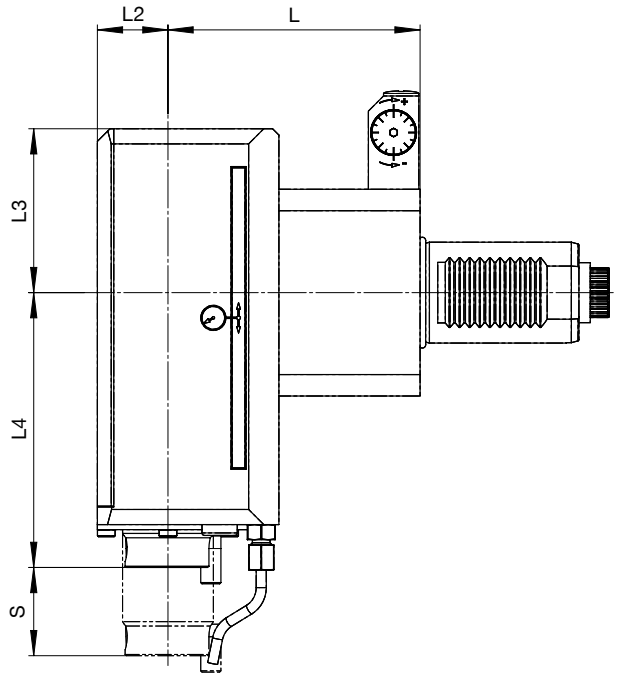
▶ TURRET INTERFACE

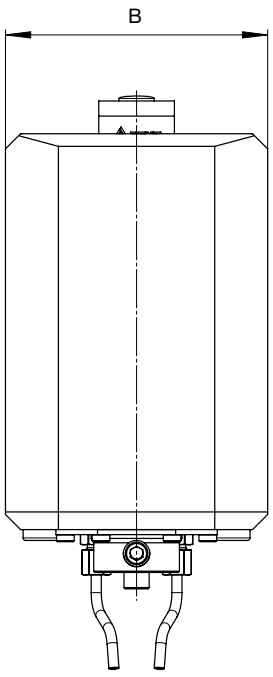

VDI


BMT


CDI


More on request





FS	
Usable working stroke	= 32 mm
Total stroke	= 35 mm
Material strength$_{max}$	= 900 N/mm²
No. of strokes/speed$_{max}$	= 1,000 rpm

▶ **Technical data**

L2 [mm]	L3 [mm]	L4 [mm]	B [mm]	S [mm]	L* [mm]	kg *
28	65	109	104	32/35	65-160	approx. 10

FSS	
Usable working stroke	= 17 mm
Total stroke	= 19 mm
Material strength$_{max}$	= 1,100 N/mm²
No. of strokes/speed$_{max}$	= 1,200 rpm

▶ **Technical data**

L2 [mm]	L3 [mm]	L4 [mm]	B [mm]	S [mm]	L* [mm]	kg *
28	65	109	104	17/19	65-160	approx. 10

FSL	
Usable working stroke	= 51 mm
Total stroke	= 53 mm
Material strength$_{max}$	= 900 N/mm²
No. of strokes/speed$_{max}$	= 750 rpm

▶ **Technical data**

L2 [mm]	L3 [mm]	L4 [mm]	B [mm]	S [mm]	L* [mm]	kg *
32	85	135	129	51/53	70-165	approx. 15

*Varies based on base holder

BROACHING UNITS FOR TURNING CENTERS
BENZ LINA - RADIAL, ANGLED

▶ PRODUCT IN OVERVIEW

- **max. groove width** 8-10 [mm]
- **Ratio** 1:1
- **max. feed per stroke** 0.15 [mm]
- **max. speed** 1,200 [rpm]

▶ TYPE

FS FIX **FSS FIX** **FSL FIX**

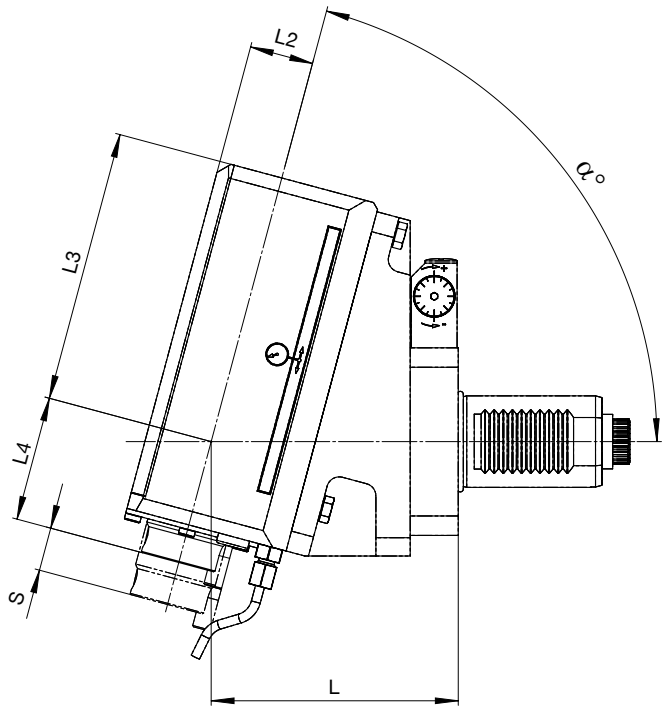
▶ TURRET INTERFACE

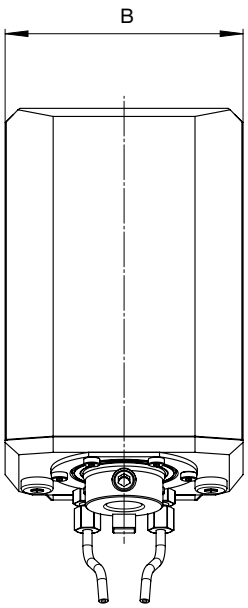

VDI


BMT


CDI


More on request





FS-FIX

Usable working stroke	= 32 mm
Total stroke	= 35 mm
Material strength$_{max}$	= 900 N/mm²
No. of strokes/speed$_{max}$	= 1,000 rpm

Technical data

α^1 [°]	L2 [mm]	L3² [mm]	L4² [mm]	B [mm]	S [mm]	L [mm]	kg *
30-90	28	approx. 134	approx. 40	104	32/35	85-200	approx. 12

FSS-FIX

Usable working stroke	= 17 mm
Total stroke	= 19 mm
Material strength$_{max}$	= 1,100 N/mm²
No. of strokes/speed$_{max}$	= 1,200 rpm

Technical data

α^1 [°]	L2 [mm]	L3² [mm]	L4² [mm]	B [mm]	S [mm]	L [mm]	kg *
30-90	28	approx. 134	approx. 40	104	17/19	85-200	approx. 12

FSL-FIX

Usable working stroke	= 51 mm
Total stroke	= 53 mm
Material strength$_{max}$	= 900 N/mm²
No. of strokes/speed$_{max}$	= 750 rpm

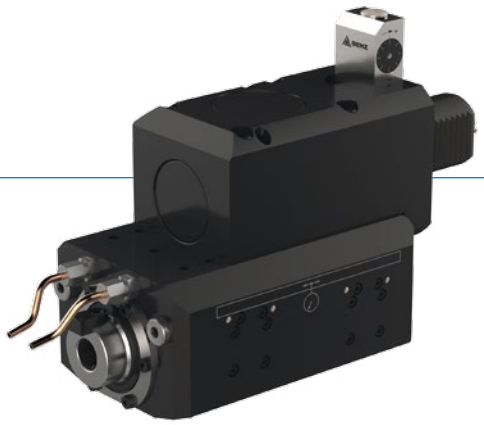
Technical data

α^1 [°]	L2 [mm]	L3² [mm]	L4² [mm]	B [mm]	S [mm]	L [mm]	kg *
45-90	32	approx. 155	approx. 65	129	51/53	90-200	approx. 17

*Varies based on base holder
1 maximum angle α depending on the machine geometry
2 Depending on angle α

BROACHING UNITS FOR TURNING CENTERS
BENZ LINA - AXIAL

▶ PRODUCT IN OVERVIEW



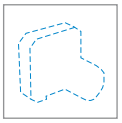
- **max. groove width** 8-10 [mm]
- **Ratio** 1:1
- **max. feed per stroke** 0.15 [mm]
- **max. speed** 1,200 [rpm]

▶ TYPE

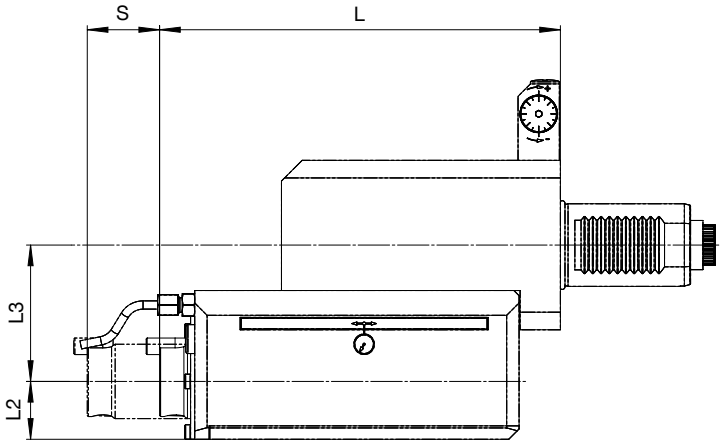
DS **DSS**

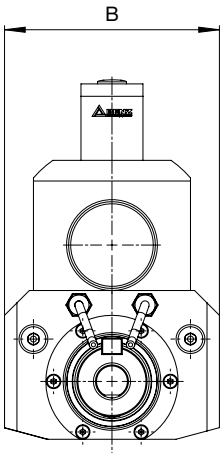
▶ TURRET INTERFACE

VDI



More on request





DS	
Usable working stroke	= 32 mm
Total stroke	= 35 mm
Material strength$_{max}$	= 900 N/mm²
No. of strokes/speed$_{max}$	= 1,000 rpm

▶ **Technical data**

L2 [mm]	L3 [mm]	B [mm]	S [mm]	L [mm]	kg
28	66	104	32/35	194	approx. 12

DSS	
Usable working stroke	= 17 mm
Total stroke	= 19 mm
Material strength$_{max}$	= 1,100 N/mm²
No. of strokes/speed$_{max}$	= 1,200 rpm

▶ **Technical data**

L2 [mm]	L3 [mm]	B [mm]	S [mm]	L [mm]	kg
28	66	104	17/19	194	approx. 12

3

STATIC BENZ LINS BROACHING FIXTURE FOR MACHINING PROFILES AND FORMS ON MACHINING CENTERS

BROACHING UNITS FOR MACHINING CENTERS
IN OVERVIEW

BENZ LINA - DRIVEN

TECHNICAL INFORMATION
System design 28

AXIAL
Variants/Technical features 30

RADIAL
Variants/Technical features 32

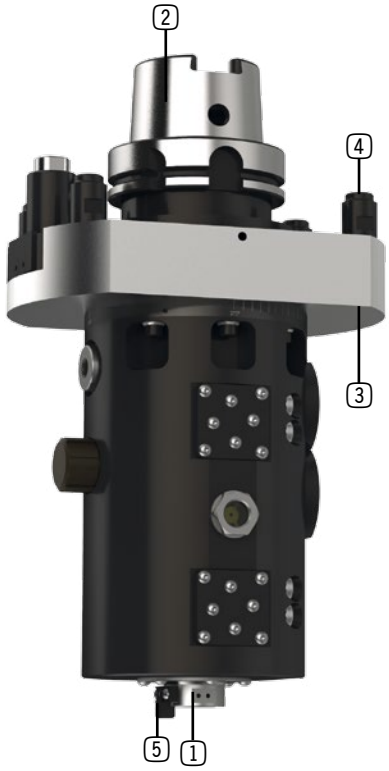
BENZ LINS - STATIC

TECHNICAL INFORMATION
System design 34

AXIAL
Variants/Technical features 36

BROACHING UNITS FOR MACHINING CENTERS
SYSTEM DESIGN

▶ BENZ LINA (AXIAL*)



1 **Tool insert**
- For holding the clamping holder

2 **Drive cone**
- For holding the broaching unit in the machine spindle
- All common drive cones available

3 **Changeable torque support arm**
- Secures the broaching unit to prevent turning during machining
- Generally adapted to the specific machine type

4 **Auxiliary support**
- Increases the stiffness between the broaching unit and the machine spindle
- Ensures optimal power transmission

5 **Key alignment**

SEMI-MODULAR DESIGN

- Changeable torque support arm/drive cone
- Broaching unit

The principle behind the shaping/broaching process
See p. 12

Optional: Equipment variants

STROKE COUNTER

p. 38

*Design also applies to the radial broaching unit

▶ TYPE OVERVIEW

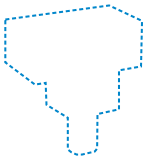
▶ BENZ LinA - driven

D = Axial type

F = Radial type

- ▶ **S** Standard stroke
- ▶ **SS** Short stroke
- ▶ **SL** Long stroke

▶ **DS**	Axial type	Standard stroke
▶ **FS**	Radial type	Standard stroke
FSS	Radial type	With short stroke
FSL	Radial type	With long stroke



Note:

- ▶ The products displayed in this catalog are standard components. We would be happy to develop a suitable solution together with you to meet your specific requirements.
- ▶ Delivery does not include equipment variants or accessories. Please order these separately at your preferred cutting insert manufacturer.
  We offer starter kits consisting of a broaching unit and predefined clamping holders to help get you started with your push-slotting operation quickly.
- ▶ For all BENZ LinA broaching units for machining centers, an auxiliary support is absolutely required.

BROACHING UNITS FOR MACHINING CENTERS
BENZ LINA - AXIAL

▶ PRODUCT IN OVERVIEW

▶ **max. groove width**	8-10 [mm]
▶ **Ratio**	1:1
▶ **max. feed per stroke**	0.15 [mm]
▶ **max. speed**	800 [rpm]

▶ TYPE

DS

▶ DRIVE CONE


SK
DIN 69871

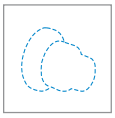

MAS BT

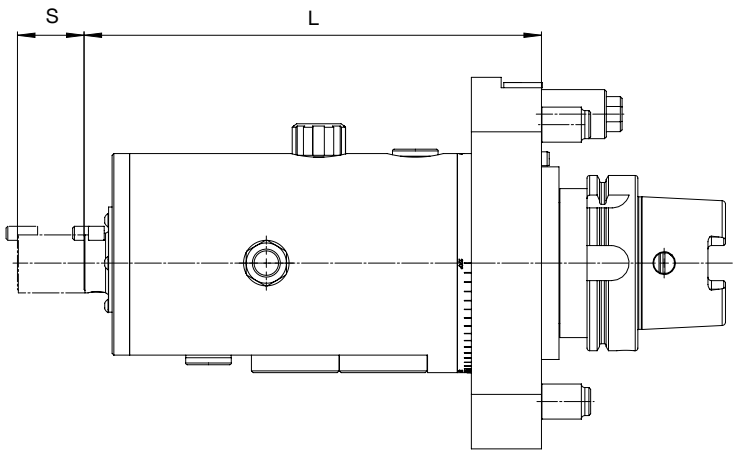

CAT

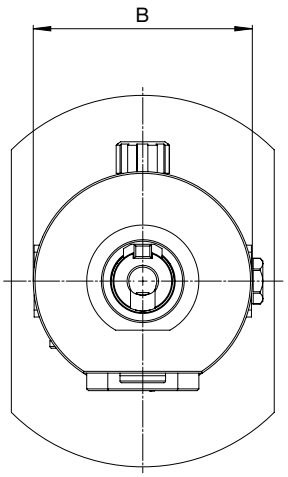

HSK
DIN 69893


Coromant
Capto®


KM™


Other





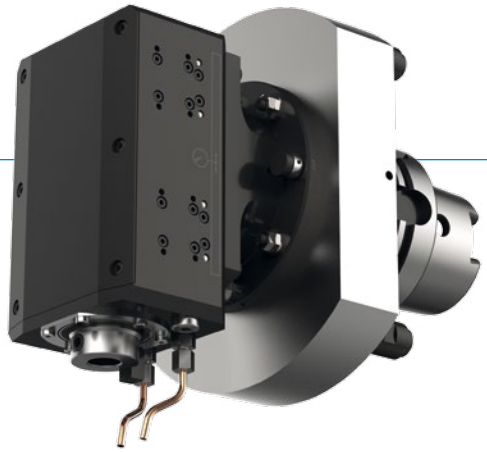
DS	
Usable working stroke	= 35 mm
Total stroke	= 38 mm
Material strength$_{max}$	= 900 N/mm²
No. of strokes/speed$_{max}$	= 800 rpm

▶ **Technical data**

B [mm]	S [mm]	L [mm]	kg
128	35/38	261	approx. 16

BROACHING UNITS FOR MACHINING CENTERS
BENZ LINA - RADIAL

▶ PRODUCT IN OVERVIEW



- **max. groove width** 8-10 [mm]
- **Ratio** 1:1
- **max. feed per stroke** 0.15 [mm]
- **max. speed** 1,200 [rpm]

▶ TYPE

FS **FSS** **FSL**

▶ DRIVE CONE


SK
DIN 69871

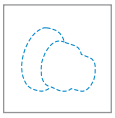

MAS BT

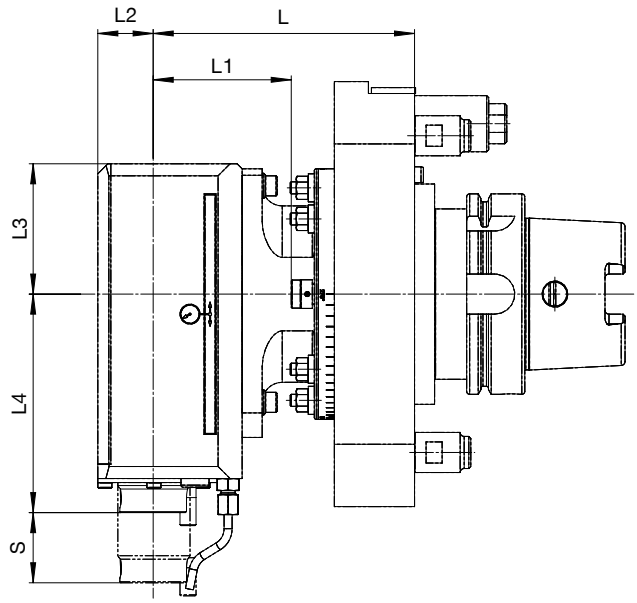

CAT

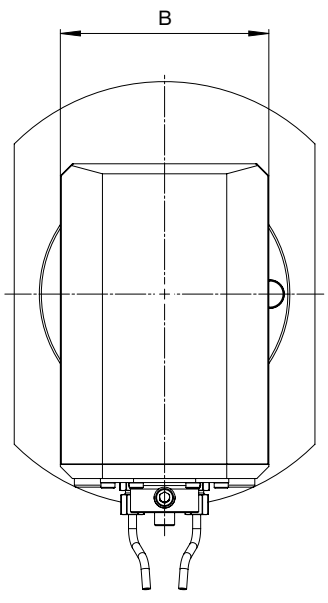

HSK
DIN 69893


Coromant
Capto®


KM™


Other





FS	
Usable working stroke	= 32 mm
Total stroke	= 35 mm
Material strength$_{max}$	= 900 N/mm²
No. of strokes/speed$_{max}$	= 1,000 rpm

▶ **Technical data**

L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	B [mm]	S [mm]	L [mm]	kg
68	28	65	109	104	32/35	130	18

FSS	
Usable working stroke	= 17 mm
Total stroke	= 19 mm
Material strength$_{max}$	= 1,100 N/mm²
No. of strokes/speed$_{max}$	= 1,200 rpm

▶ **Technical data**

L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	B [mm]	S [mm]	L [mm]	kg
68	28	65	109	104	17/19	130	18

FSL	
Usable working stroke	= 51 mm
Total stroke	= 53 mm
Material strength$_{max}$	= 900 N/mm²
No. of strokes/speed$_{max}$	= 750 rpm

▶ **Technical data**

L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	B [mm]	S [mm]	L [mm]	kg
73	32	85	135	129	51/53	135	23

BROACHING UNITS FOR MACHINING CENTERS
SYSTEM DESIGN

▶ BENZ LINS (AXIAL)

1 Tool holder, static
- For holding the cutting tool

2 Drive cone
- For holding the broaching fixture in the machine spindle
- All common drive cones available

3 Changeable torque support arm
- Secures the broaching fixture to prevent turning during machining
- Generally adapted to the specific machine type

SEMI-MODULAR DESIGN

- ▶ Drive cone
- ▶ Static tool holder

The principle behind the shaping/broaching process
See p. 12

Advantages
- ▶ Avoidance of a pointed load on the machine main spindle
- ▶ Adjustable orientation of the cutter position (rotatable 360° around the spindle axis)

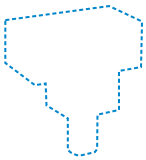
Videos

- ▶ **BENZ LinS - in use**
  Scan the adjacent QR code with a smartphone and see a demonstration of the BENZ LinS in action. Alternatively, you can visit our YouTube channel to view the video: www.youtube.com/BENZWerkzeugsysteme

▶ TYPE OVERVIEW

▶ BENZ LinS - static

WAS = Axial type



Note:

- The products displayed in this catalog are standard components. We would be happy to develop a suitable solution together with you to meet your specific requirements.
- Delivery does not include equipment variants or accessories. Please order these separately at your preferred cutting insert manufacturer.
  We offer starter kits consisting of a broaching unit and predefined clamping holders to help get you started with your push-slotting operation quickly.
- For all BENZ LinS broaching fixtures for machining centers, an auxiliary support is recommended.

BROACHING UNITS FOR MACHINING CENTERS
BENZ LINS - AXIAL

▶ PRODUCT IN OVERVIEW

▶ TYPE

WAS

▶ DRIVE CONE


SK
DIN 69871

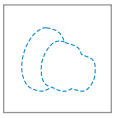

MAS BT

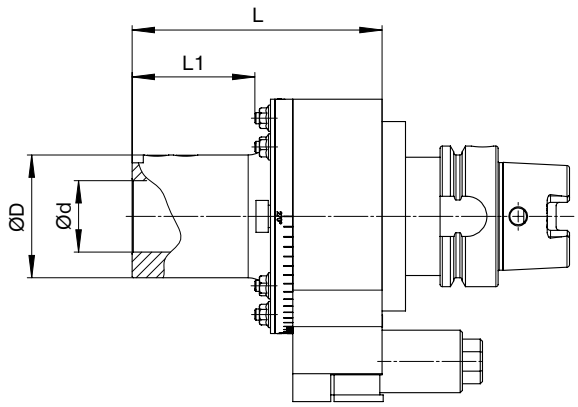

CAT

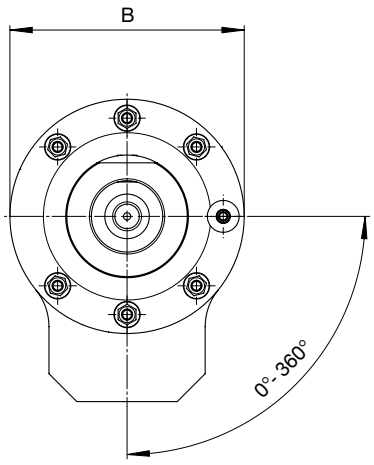

HSK
DIN 69893


Coromant
Capto®


KM™


Other





WAS	
Usable working stroke	= depending on
Total stroke	Tool
Material strength$_{max}$	= 1,100 N/mm²

▶ **Technical data**

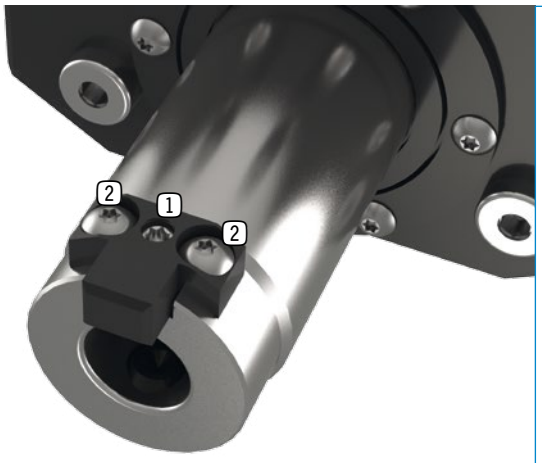
L1 [mm]	Ød [mm]	ØD [mm]	B [mm]	L [mm]	kg
55	16-32	55	105	112	approx. 5

BROACHING UNITS
EQUIPMENT VARIANTS

▶ STROKE COUNTER

- **Convenient and fast monitoring of performed strokes** via digital display
- **Efficient and preventative maintenance** by determining the perfect maintenance times
- **Prevention of potential faults during production** by reducing the risk of unit failure to a minimum

▶ ALIGNMENT OPTION FOR CLAMPING HOLDERS



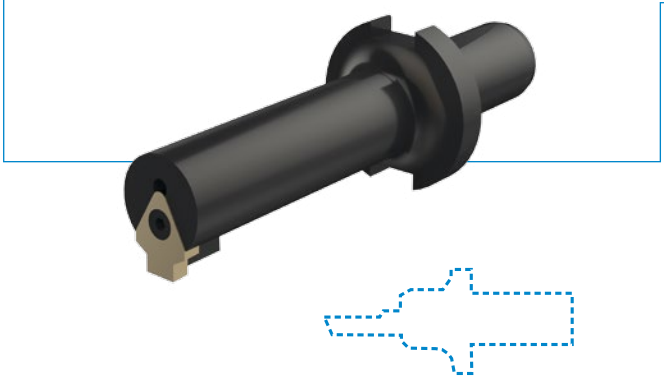
- **Precision processing**
  Inaccuracies at the plunger, clamping holder and turret can be compensated for using the alignment option

(1) **Eccentric**
(2) **Clamping screws**

DRIVEN BENZ LINA BROACHING UNIT FOR TURNING CENTERS WITH CLAMPING HOLDER AND COOLANT NOZZLE: TAKE ADVANTAGE OF OUR LINE OF ACCESSORIES FOR A QUICK AND EASY LAUNCH INTO SHAPING TECHNOLOGY

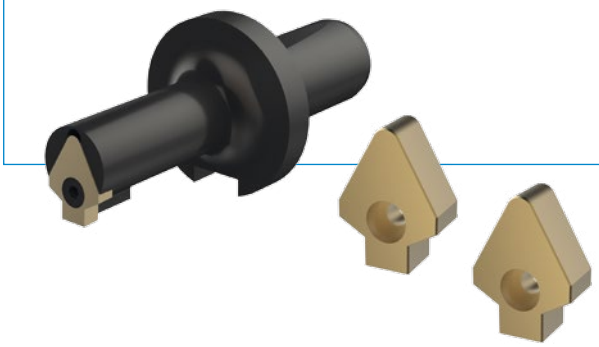
BROACHING UNITS
ACCESSORIES

▶ CLAMPING HOLDER



- **For internal and external machining**
  Variant 1: One clamping holder for internal machining and one for external machining
  Variant 2: One clamping holder for both internal and external machining; also capable of being rotated by 180° using the second groove
- **Clamping holder to match the broaching unit**
  You can find the right solution at your preferred cutting insert manufacturer. We would be happy to pass on corresponding contact information.

▶ STARTER KIT



- **Complete package**
  For your broaching unit, we offer the right clamping holder including a second plate at an attractive set price
- **Quickly getting up to speed in shaping technology**
  A starter kit together with your broaching unit let you immediately get started with your machining

COMPLETE MACHINING OF FORMS OF ALL KINDS ON LATHES AND MACHINING CENTERS

BROACHING UNITS
SERVICE

▶ SERVICES: CUSTOMIZED, VALUE-RETAINING, COST-EFFECTIVE

▶ **Service repair**
Fast and professional analysis of damage
Findings and repair recommendations within 5 working days
on request: general maintenance or refurbishing

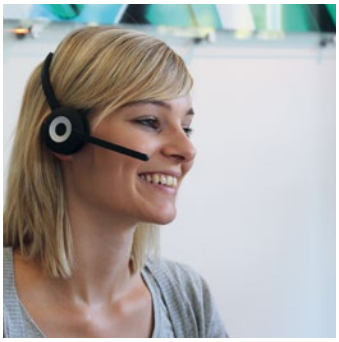
▶ **ExpressService**
Exceptionally fast and efficient turnaround
Repair at a fixed price
48-hour ExpressService available for select units

▶ **Individual crash package**
Keep machine downtime and lost profits to a minimum
Highly recommended for customer-specific solutions
Includes regular wear and tear as well as special parts

▶ **Preventive maintenance**
Prevention: Reduce unplanned downtime, increase unit operating times and unit life cycle
Maintain proper product performance / general maintenance or refurbishing
Replacement of wear parts during your planned downtime

Spare part management
Immediate availability / delivery of original precision spare parts
Comprehensive inventory of spare parts / High availability
Spare parts express shipment as needed

Global service
Service technicians visit you on site



Service Hotline
Skilled service representatives answer your questions and provide additional support in the event of a problem
Contact information: www.benz-tools.com

INQUIRY FORM
BROACHING UNITS FOR TURNING CENTERS

BENZ Werkzeugsysteme

Customer number		Telephone number	
Company		Fax number	
Contact Mr. ☐ Ms. ☐		E-mail	
BENZ retailer (if known)		Date	

Machine information/Tool data

Machine manufacturer		Serial number	
Machine model			
No. of tools e.g. 8,12,16, etc.		Tool shank e.g. VDI, BMT, CDI, etc.	
Turret manufacturer		Turret drive e.g. DIN 5480, DIN 1809,	

Turret type

 ☐ Star turret

 ☐ Disc turret

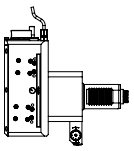
Design

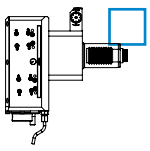
Reference article No.

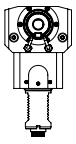


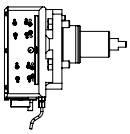
Design	BENZ LinA - radial	BENZ LinA - radial, angled	BENZ LinA - axial
Type	☐ FS ☐ FSS ☐ FSL	☐ FS-FIX ☐ FSS-FIX ☐ FSL-FIX	☐ DS ☐ DSS
Quantity			

Design/Version

 ☐ VDI Left Tool

 ☐ VDI Right Tool

 ☐ VDI Dual serration

 ☐ BMT, CDI, etc. Universal

Machining

Geometry	Groove	Toothing	Torx	Hexagon socket	Special
Dimensions					
Required accuracy					

Material

Equipment variants/Accessories

☐ Stroke counter

☐ Alignment option for clamping holder

☐ Starter kit

Comments
e.g. requests for accessories, special processing details

Desired delivery date

INQUIRY FORM
BROACHING UNITS FOR MACHINING CENTERS

BENZ Werkzeugsysteme

Customer		Telephone number	
Company		Fax number	
Contact Mr. ☐ Ms. ☐		E-mail	
BENZ retailer (if known)		Date	

Machine information/Tool data

Machine manufacturer | Serial number

Machine model | Spindle input

Are BENZ angle heads already in use on the machine? ☐ Yes ☐ No

Drawing number/ Unit number

Stop block present ☐ Yes ▶ Please send us the drawing of the spindle with the stop block ☐ No ▶ Please send us the machine adaptation drawing

Auxiliary support ☐ Yes ☐ No

Tool change ☐ Manual ☐ Automatic ▶ max. ____ kg max. Ø ____ mm

Design

Reference article No.



Design	BENZ LinA - radial	BENZ LinA - axial	BENZ LinS
Type	☐ FS ☐ FSS ☐ FSL	☐ DS ☐ DSS	☐ WAS Ø
Quantity			

Machining

Geometry	Groove	Toothing	Torx	Hexagon socket	Special
Dimensions					
Required accuracy					

Material

Equipment variants/Accessories

☐ Stroke counter

☐ Alignment option for clamping holder

☐ Starter kit

Comments
e.g. requests for accessories, special processing details

Desired delivery date

TECHNOLOGIES
ZIMMER GROUP

HANDLING TECHNOLOGY

WITH MORE THAN 30 YEARS OF EXPERIENCE AND INDUSTRY KNOWLEDGE, OUR PNEUMATIC, HYDRAULIC AND ELECTRICAL HANDLING COMPONENTS AND SYSTEMS ARE GLOBAL LEADERS.

Components. More than 2000 standardized gripper systems, positioning systems, robotools and much more. We offer a complete selection of technologically superior products that are ready for rapid delivery.

Semistandard. Our modular approach to design enables custom configurations and high rates of innovation for process automation.

Systems. We are particularly strong in providing custom system solutions for handling technologies, robotics and vacuum engineering.

DAMPING TECHNOLOGY

INDUSTRIAL DAMPING TECHNOLOGY AND SOFT CLOSE PRODUCTS EXEMPLIFY THE INNOVATION AND PIONEERING SPIRIT OF THE KNOW-HOW FACTORY.

Industrial damping technology. Whether standard or customized solutions, our products stand for the highest cycle rates and maximum energy absorption with minimal space requirements.

Soft Close. Development and mass production of pneumatic and hydraulic dampers with extraordinary quality and rapid delivery.

OEM and direct. Whether they need components, returning mechanisms or complete production lines – we are the trusted partner of many prestigious customers.

LINEAR TECHNOLOGY

WE DEVELOP LINEAR COMPONENTS AND SYSTEMS THAT ARE INDIVIDUALLY ADAPTED TO OUR CUSTOMERS' NEEDS.

Clamping and braking elements. We offer you more than 4000 types for profiled and rounded rails as well as for a variety of guide systems from all manufacturers. It makes no difference whether you prefer a manual, automatic, electric or hydraulic drive.

Individualized systems. The unique functionality and precision of our clamping and breaking elements open up numerous possibilities for custom applications such as active or semi-active braking and damping.

ZIMMER group

ZIMMER

PROCESS TECHNOLOGY

MAXIMUM EFFICIENCY IS ESSENTIAL FOR SYSTEMS AND COMPONENTS USED IN PROCESS TECHNOLOGY. HIGH-LEVEL CUSTOM SOLUTIONS ARE OUR TRADEMARK.

A rich reservoir of experience. Our know-how ranges from the development of materials, processes and tools through product design to production of series products. Challenge us.

Deep production capabilities. The Zimmer Group pairs these capabilities with flexibility, quality and precision, even when making custom products.

Series production. We manufacture demanding products out of metal (MIM), elastomers and plastics with flexibility and speed.

BENZ Werkzeugsysteme

TOOLING TECHNOLOGY

ZIMMER GROUP DEVELOPS INNOVATIVE WOOD, METAL AND COMPOSITE PROCESSING TOOL SYSTEMS FOR ALL INDUSTRIES. NUMEROUS CUSTOMERS CHOOSE US AS THEIR SYSTEMS AND INNOVATION PARTNER.

Knowledge and experience. Industry knowledge and a decades-long development partnership for exchangeable assemblies, tool interfaces and tool systems make us the ideal choice for new challenges around the world.

Components. We deliver numerous standard components from stock and develop innovative, customized systems for OEM and end customers – far beyond just the metal- and wood-processing industries.

Variety. Whether you have machining centers, lathes or flexible production cells, the power tools, holders, assemblies and drilling heads of Zimmer Group are ready for action.

BENZ Werkzeugsysteme

MACHINE TOOLING TECHNOLOGY

AS A DRIVING FORCE IN OUR INDUSTRY, WE DELIVER HIGH-VALUE SOLUTIONS IN THE FIELD OF MECHANICAL ENGINEERING, FULLY ACCORDING TO THE NEEDS OF OUR CUSTOMERS.

Development partner. We accompany you from brainstorming to inspection of the final machine, always to your expectations.

Components. We deliver series products and modules, five-axis heads, motor spindles, gearbox swiveling heads, add-on assemblies and motors.

Systems. The Know-how Factory stands for solutions in the fields of mechanical engineering systems, specialty solutions, custom assemblies and mechanical modules. We manufacture and configure multiple-spindle and large-angle heads as well as large boring heads.

USAGE NOTE
GENERAL

The contents of this catalog are not legally binding and are intended solely for informational purposes. Any final agreement will be in the form of a written order confirmation from BENZ GmbH, which occurs only subject to the respective current General Terms and Conditions of Sale and Delivery of BENZ GmbH. These can be found online at **www.benz-tools.com**.

All of the products listed in this catalog are designed for their intended use, e.g. machines for precision machining. The recognized technical regulations for safety and professional work must be followed for use and installation.

Furthermore, the respective laws, guidelines from TÜV, guidelines from the respective trade association and VDE stipulations shall apply.

The technical data listed in this catalog must be observed by the user. The conditions of use may not fall below or exceed the specified data. If information is missing, it cannot be assumed that there are no upper or lower limits or no limitations for specific use cases. Consultation is required in these cases.

Disposal is not included in the price, which would have to be taken into account accordingly in the event of return to or disposal by BENZ GmbH.

TECHNICAL DATA AND FIGURES

The technical data and figures have been compiled with great care and to the best of our knowledge. We cannot guarantee that the information is up to date, correct or complete.

The specifications and information—such as figures, drawings, descriptions, dimensions, weights, materials, technical and other performance data and the described products and services—contained in general product descriptions, BENZ GmbH catalogs, brochures and price lists in any form are subject to change and may be modified or updated at any time without prior notification. They are binding only to the extent expressly specified in a contract or order confirmation. Slight deviations from such descriptive product information shall be considered approved and shall not affect fulfillment of agreements insofar as they are reasonable for the customer.

LIABILITY

Products from BENZ GmbH are subject to the German Product Liability Act. This catalog does not contain any guarantees, assurances of quality or procurement agreements for the products it depicts, neither expressly nor implied, including for the availability of products. Advertising statements relating to quality features, properties or applications for the products are not legally binding.

To the extent permitted by law, BENZ GmbH is exempt from any liability for direct or indirect damage, subsequent damage and requests of any kind or on any legal basis resulting from the use of information contained in this catalog.

TRADEMARK, COPYRIGHT AND REPRODUCTION

The depiction of commercial property rights in this catalog—such as brands, logos, registered trademarks or patents—does not include the granting of licenses or use rights. Their use is not permitted without the expressed written agreement of BENZ GmbH. All contents of this catalog are the intellectual property of BENZ GmbH. For the purposes of copyright, any unlawful use of intellectual property, including excerpts, is prohibited. Reprinting, copying or translating (including in the form of excerpts) are permitted only with the prior written consent of BENZ GmbH.

STANDARDS

Zimmer Group has a quality management system certified in accordance with ISO 9001:2008. Zimmer Group has an environmental management system certified in accordance with ISO 14001:2004.

USAGE NOTE
INDIVIDUAL

DECLARATION OF INCORPORATION IN TERMS OF THE EC DIRECTIVE 2006/42/EC ON MACHINERY (ANNEX II 1 B)

We hereby declare that our products meet the basic requirements of the Machinery Directive 2006/42/EC as an incomplete machine to the extent that this is possible as part of delivery.

We also declare that the specific technical documents were produced in accordance with Annex VII Part B of this Directive. We undertake to provide the market supervisory bodies with versions of the incomplete machine's special documents via our documentation department should they have reason to request them.

The incomplete machine also satisfies the stipulations of EC Directive 2004/108/EC on electromagnetic compatibility. The protective goals of EC Directive 2006/95/EC regarding electronic equipment have been met.

The incomplete machine may only be commissioned if it has been ascertained, if applicable, that the machine or system in which the incomplete machine is to be installed satisfies the requirements of Directive 2006/42/EC on Machinery and an EC declaration of conformity has been drawn up in accordance with Annex II.

ARE YOU ALREADY FAMILIAR
WITH OUR EXPERTISE?

- TEAMS OF EXPERTS WITH INDUSTRY EXPERIENCE
- INTERNATIONALLY NETWORKED THROUGH WORLD-WIDE LOCATIONS AND PARTNERS
- THE HIGHEST QUALITY FOR ALL PRODUCTS AND SERVICES
- PRECISE, CUSTOMER-SPECIFIC SOLUTIONS
- CONSTANT DEVELOPMENT OF OUR INDUSTRY EXPERTISE

BENZ GMBH WERKZEUGSYSTEME

BENZ PRECISION TOOLS PROVIDE REFINED SOLUTIONS, INNOVATIVE TECHNOLOGY AND THE HIGHEST LEVELS OF QUALITY IN PRECISION MACHINING.

AS PART OF THE ZIMMER GROUP, WE GO ONE STEP FURTHER. THE NEW **ZIMMER GROUP** UMBRELLA BRAND COMBINES THE COMPANIES ZIMMER GMBH, ZIMMER KUNSTSTOFFTECHNIK, ZIMMER DAEMPFUNGSSYSTEME AND BENZ WERKZEUGSYSTEME INTO ONE PARTNER FOR YOUR PROJECTS: THE KNOW-HOW FACTORY.

CHALLENGE US. DISCOVER THE ENTIRE WORLD OF ZIMMER GROUP! IF YOU HAVE QUESTIONS ABOUT THE NEW ZIMMER GROUP AND OUR TECHNOLOGY, WE WOULD BE HAPPY TO ANSWER THEM.

CONTACT

BENZ GmbH Werkzeugsysteme
Im Mühlegrün 12
D-77716 Haslach
T +49 7832 704-0
F +49 7832 704-8001
info@benz-tools.com
www.benz-tools.com

BENZ® Werkzeugsysteme powered by the ZIMMER group