



Tooling Technology Machine Tooling Technology

BENZ Modular Quick Change Systems
+ BENZ Solidfix®
+ BENZ CAPTO™

METAL MACHINING



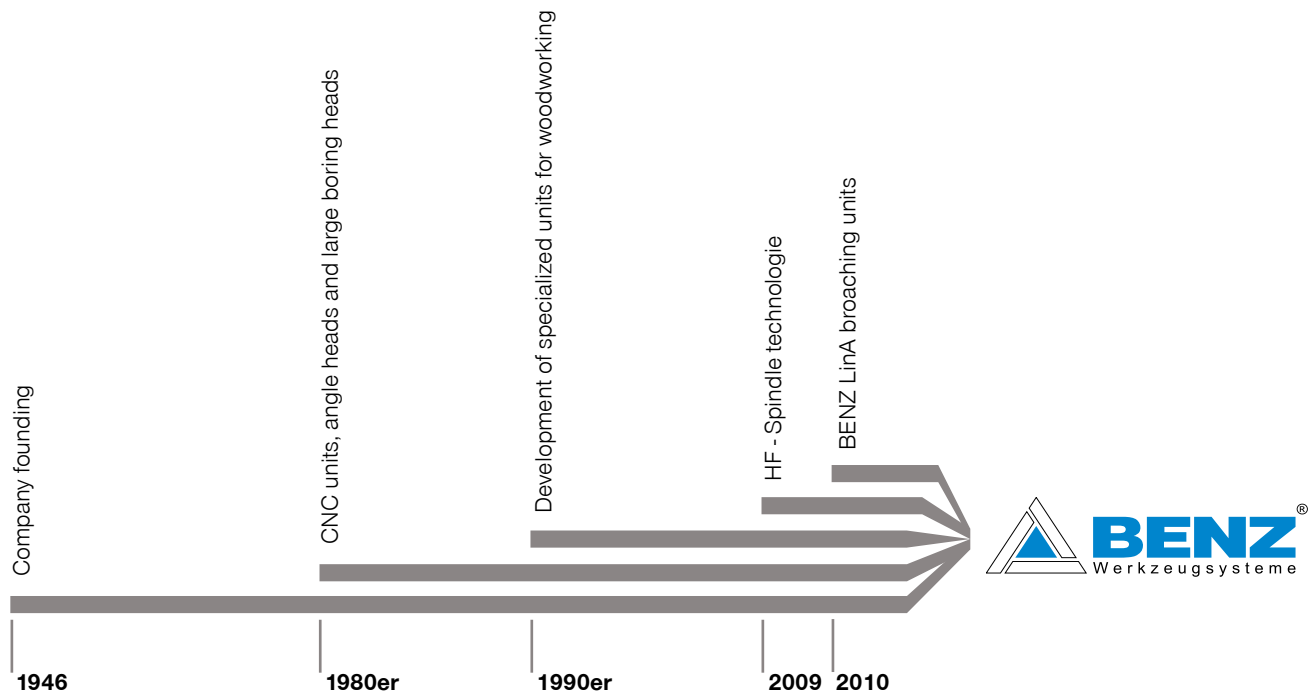
AT BENZ GMBH WERKZEUGSYSTEME, OUR MAXIM, INNOVATION, PRECISION, PASSION, IS FAR MORE THAN JUST A MARKETING FORMULA. RATHER, IT DESCRIBES THE CORE GOALS OF OUR BUSINESS WHILE ALSO OUTLINING THE REASONS WHY WE HAVE BEEN ABLE TO COMPETE IN THE MARKET SUCCESSFULLY WITH TOOL SYSTEMS FOR WOODWORKING, METAL 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 multi-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 AND MACHINE TOOLING TECHNOLOGY

EXCHANGEABLE UNITS

LIVE TOOLS

MULTI-SPINDLE HEADS AND LARGE DRILL HEADS

SYSTEM TECHNOLOGY

BENZ MODULAR QUICK CHANGE SYSTEMS IN OVERVIEW



BENZ MODULAR QUICK CHANGE SYSTEMS BENZ SOLIDFIX® BENZ CAPTO™

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BENZ SOLIDFIX® SYSTEM DESIGN

2 Page 10



BENZ CAPTO™ SYSTEM DESIGN

3 Page 14



ADAPTER+ACCESSORIES NAVIGATOR

4 Page 18



BENZ SOLIDFIX® TOOL ADAPTER

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BENZ CAPTO™ TOOL ADAPTER

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ACCESSORIES COLLET CHUCK

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ACCESSORIES WRENCHES + MISCELLANEOUS

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BENZ MODULAR QUICK CHANGE SYSTEMS

BENZ SOLIDFIX® AND BENZ CAPTO™

► CHALLENGE: REDUCTION OF SET-UP TIME AND PROCESS OPTIMIZATION

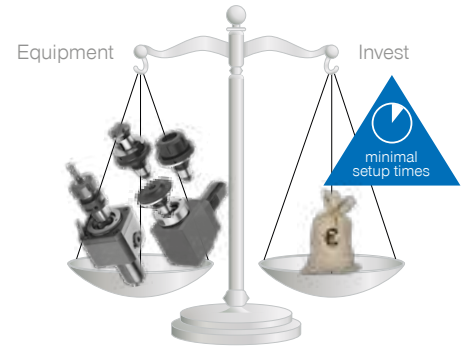
An investment worth making

Beside higher rpms and higher accuracy the reduction of set up and machine down times is the main focus in the manufacturing industry. An important success factor is the integration of a modular tool interface.

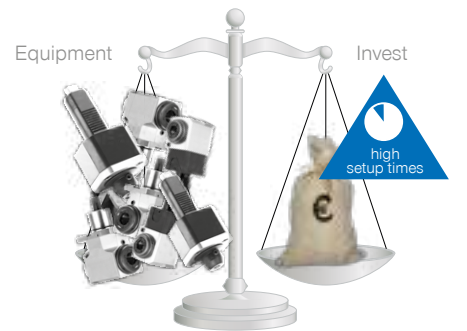
The basic principle and the biggest advantage of modular tooling systems is that tools can be pre-set, set up and be ready for use on the machine by the operator, all while he is already in the process of machining other parts. The pre-set adapters then can be changed in a flash in the machine.

You as the customer increase the valuable production time of your machine while at the same time saving costs: Due to the modular design only the adapters are being changed - the base tool holder stays in the machine. This reduces the necessity of buying additional tools to a minimum.

With BENZ Solidfix® and BENZ CAPTO™ you have tow of the most advanced and sophisticated modular quick change sytems available to you.



Equipment-Investment comparison modular tool systems with non modular



► ABOUT THE PRODUCTS

FIELD OF APPLICATIONS

BENZ Solidfix® and BENZ CAPTO™

Are you looking for a quick change system that can be used in all areas of your production? The modular Quick Change Systems made by BENZ can be used in Live Tools as well as right angle heads, even Multi-spindle heads. BENZ Solidfix® and BENZ CAPTO™ are not only suited for large batch manufacturing but are especially cost effective when machines have to be re-tooled frequently due to manufacture of small lots or specialty parts. You save time and money.

Can be used on all common

- lathes
- turning-/milling centers
- machining centers
- transfer lines

APPLICATION



▶ SYSTEM BENEFITS



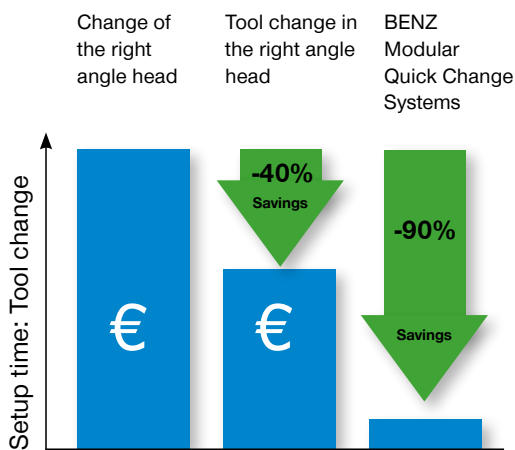
BENZ Solidfix®
tool holding fixture



BENZ CAPTO™
tool holding fixture



- ▶ **modular design**
via basic tool and exchange unit with various tool holders
- ▶ **minimize setup- and nonproductive time**
via change of the pre-set tool within seconds
- ▶ **much lower investment**
as the basic tool stays on the machine and only the adapters are changed in total fewer basic tools are needed
- ▶ **simple handling**
by one-hand operation, without special tools
- ▶ **operator safety**
tool cannot fall out

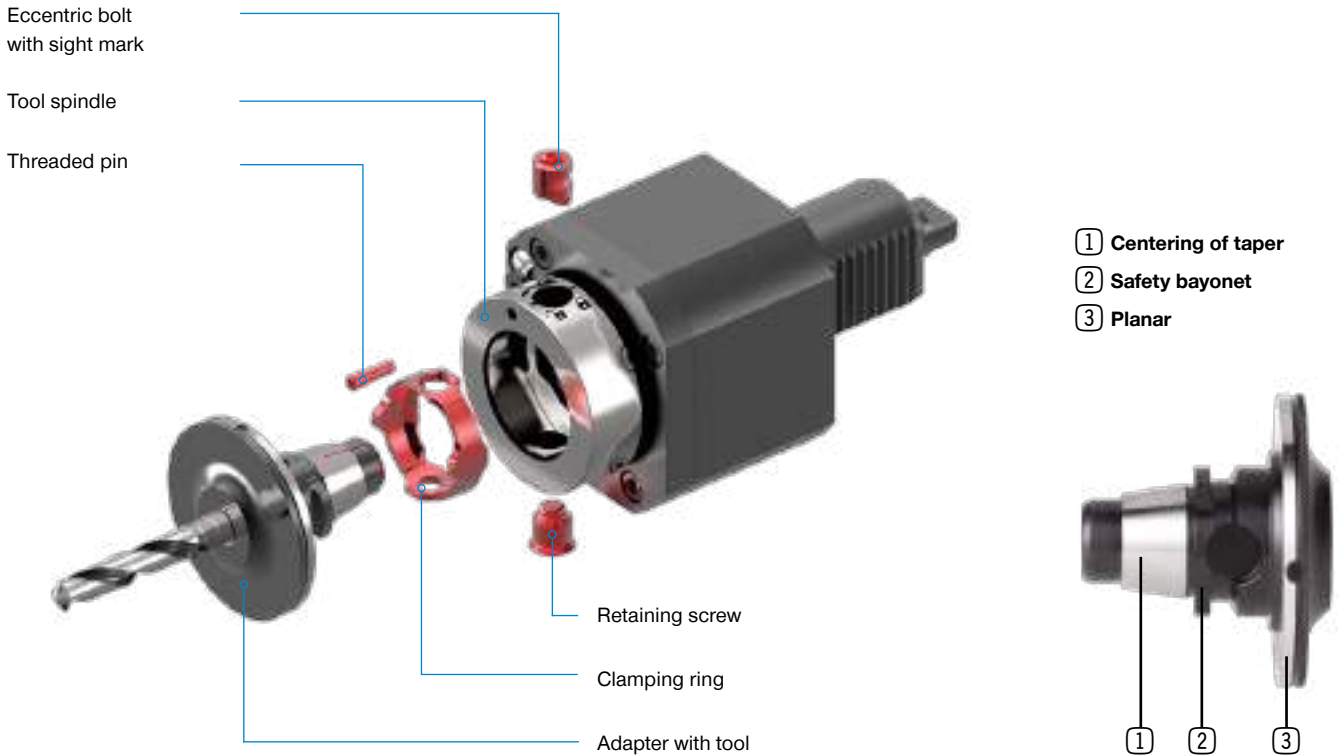


- ▶ **Reduce setup time = Save costs**
Long machine standstill times arise for a tool change where the complete unit is taken out of the machine. By changing the cutting tool directly on the unit, setup times can already be reduced by 40%. The optimum can be achieved with modular quick-change systems. Here the cutting tool is measured outside of the machine in the presetting device. Replacing the adapter therefore only requires a few seconds. You save 90% of your original setup costs! You also reduce your reject rate as the first part is already a good part.

MODULAR QUICK CHANGE SYSTEM

BENZ SOLIDFIX®

► SYSTEM DESIGN



► ABOUT BENZ SOLIDFIX®

FIELD OF APPLICATIONS

User friendly, stable and very precise

By combining taper concentricity with no backlash with an extremely large planar surface, combined with high torque, BENZ Solidfix® offers a maximum in stability and rigidity, which is even capable of withstanding the demands of milling. The high torque transmission and the highest possible rpms also stress the effectiveness. This is supported by a special clamping mechanism which works centrally, without lateral forces, which in combination with the compact, highly precise components used achieves optimal values for concentricity, rigidity and accuracy in repeatability. Because of its compact design the system is ideal for tools with internal cooling.

SYSTEM OVERVIEW

► Technical data

Size	T* [Nm]	Wrench size	Recommended VDI combination**
S1	25	SW 3	VDI 20
S2	50	SW 4	VDI 25
S3	100	SW 5	VDI 30
S4	200	SW 6	VDI 40
S5	400	SW 6	VDI 50

*transmittable torque of interface

** clamping system also for comparable BMT/CDI tools

▶ PRODUCT BENEFITS



All aces in one hand

Performance

- ▶ compact design
- ▶ large planar contact surface
- ▶ high rigidity (milling capable)
- ▶ high transmission of torque
- ▶ high speed (balancing-neutral design)

Precision

- ▶ high concentricity: $< 5 \mu\text{m}$ auf 30 mm
- ▶ high repeatability
- ▶ central, cross-force-free transmission of forces
- ▶ play-free centering of taper

Handling

- ▶ quick change, change in < 20 seconds
- ▶ one-hand operation
- ▶ simple handling without the need of special tools
- ▶ resistance controlled clamping (180°) - no need to observe torque
- ▶ ejection feature

Safety

- ▶ securing device via safety bayonet
- ▶ self-locking clamp function
- ▶ avoidance of operating errors
- ▶ fulfills machinery directive 2006/42/EG



Video



▶ BENZ Solidfix® - in use

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

MODULAR QUICK CHANGE SYSTEM

BENZ SOLIDFIX®

▶ TOOL CHANGE



▶ Step 1: Familiarize yourself with the system

In order to change an adapter in the angle head/live tool the operation unit needs to be in a loose position.



Loose position:
Marking is sitting on open lock



Clamped position:
Marking is sitting on closed lock



▶ Step 2: Inserting the adapter

Insert the adapter into the tool spindle. The adapter cannot fall out due to a special safety mechanism which holds the tool in place, even if not clamped yet. This prevents injuries during set up of the tools in the machine.



▶ Step 3: Resistance controlled clamping

The modular quick change system BENZ Solidfix® can be operated with just one hand without any special tools - a standard hex key is sufficient. By simply turning the clamping screw 180 degrees (up to its end position) the tool adapter (meaning the tool) is clamped.



▶ Step 4: Loosening and changing the adapter

After loosening the locking mechanism with a hex key and turning the tool adapter 90 degrees (a bayonet style safety mechanism prevents the tool from falling out after opening the lock) the adapter can be removed. A specialized eject feature ensures that the adapter does not get stuck in the spindle. The tool change can be done in less than 20 seconds.

▶ APPLICATION EXAMPLE

MACHINING CENTER



Tool change for an angle head with BENZ Solidfix®.

▶ APPLICATION EXAMPLE

CNC LATHE TURRET

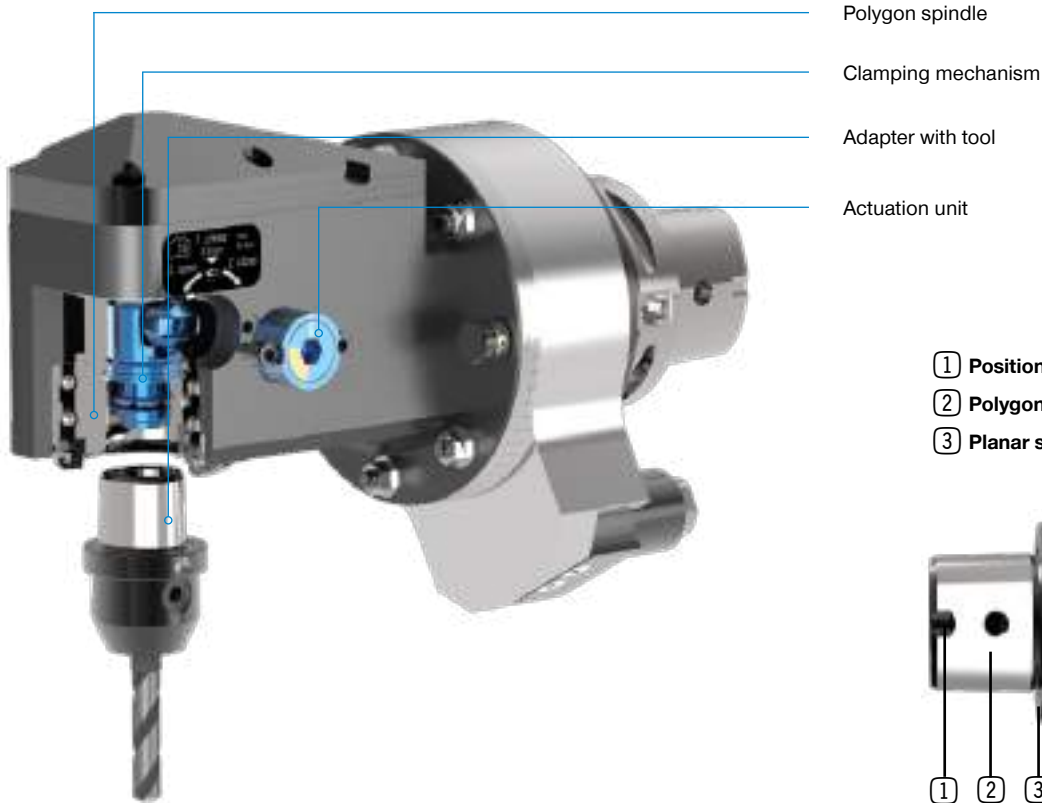


Tool Change for a driven tool with BENZ Solidfix® on the CNC turret. Above: Right Angle tool with BENZ CAPTO™ interface

MODULAR QUICK CHANGE SYSTEM

BENZ CAPTO™

► SYSTEM DESIGN



► ABOUT BENZ CAPTO™

FIELD OF APPLICATIONS

Increase of efficiency and machining quality

The modular quick change system BENZ CAPTO™ guarantees an extremely compact design by being integrated into the spindle. Special clamping kinetics for clamping forces are noticeably below the required range of ISO/DIS 26623-2. BENZ CAPTO™ can be used for milling, drilling and turning, with up to 100 bar coolant pressure. The system is especially suited for heavy duty milling and machining.

SYSTEM OVERVIEW

► Technical data

Size	T [Nm]	Wrench size	Recommended VDI combination**
C3	320	SW 6	VDI 30
C4	580	SW 8	VDI 40
C5	1000	SW 10	VDI 50
C6	2000	SW 12	VDI 60

*transmittable torque of the polygon

** clamping system also for comparable BMT/CDI tools

▶ PRODUCT BENEFITS



All aces in one hand

Performance

- ▶ compact design/short implementation
- ▶ special clamping kinetics for clamping forces are noticeably below the required range of ISO/DIS 26623-2
- ▶ pressure of coolant up to 100 bar
- ▶ ideal for heavy milling

Precision

- ▶ stability and rigidity with high flexibility at the same time
- ▶ compact shape guarantees high cutting speeds and surface quality

Handling

- ▶ fast tool change with additional locking mechanism (ratcheted)
- ▶ optically visible clamping position 100°
- ▶ starting torque: 50 Nm (C4)

Safety

- ▶ from 75 degrees onwards the clamping process is already so secure that the tool can be used in production
- ▶ visual markings > correct clamping of the tool is easily seen
- ▶ additional safety function > prevents uncontrolled falling out of the tool holder



Video



▶ BENZ CAPTO™ - in use

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

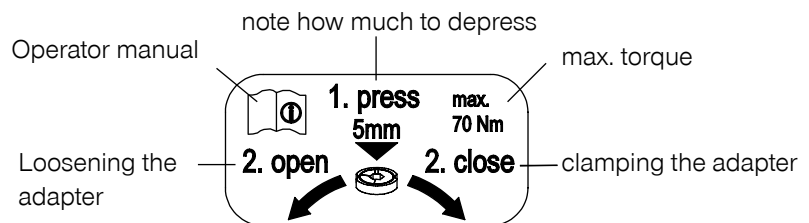
MODULAR QUICK CHANGE SYSTEM

BENZ CAPTO™

▶ TOOL CHANGE



▶ Step 1: Familiarize yourself with the symbols



▶ Step 2: Cleaning of tool holder with compressed air

Clean the tool insert. Please note: Only clean around the edges of the Polygon. Never blow air centrally into the clamping mechanism!



▶ Step 3: Inserting the adapter

Inserting the adapter into the tool holder (in release position). The adapter is held in the base by a locking mechanism.



The locking mechanism holds the tool in the base



▶ Step 4: Loosening and changing the adapter

Align the marks on the adapter and the tool insert. The adapter is held in the base by a locking mechanism.

Note: this step is only necessary for Live Tools. Static BENZ CAPTO™ tools have a fixed polygon position.

▶ TOOL CHANGE



▶ Step 5: Clamping of the adapter

To do this press the mechanism and at the same time rotate by approx. 100 degree clockwise in the “close” direction. Optimal clamping force is achieved when applying the recommended torque. The tool is already clamped securely as soon as a 75 degree angle is achieved.



▶ Step 6: Loosening the adapter

After machining you can loosen the adapter by pressing the mechanism and at the same time rotating counterclockwise in the “open” direction. The adapter will be held in the tool after loosening until you take it out.

Note for clamping and un-clamping: for static Benz CAPTO™ tools it is sufficient to simply rotate, no pressure needs to be applied.

▶ SAMPLE APPLICATION

QUICK CHANGE



Tool Change for a driven tool with Modular Quick Change System BENZ CAPTO™.

ADAPTER + ACCESSORIES

NAVIGATOR

BENZ SOLIDFIX®



COLLET CHUCK

8° Type ER

22



WELDON

for parallel shanks DIN 1835B

22



WHISTLE-NOTCH

for parallel shanks DIN1835E

23



MILLING ARBOR

24



COLLET CHUCK

with TER-shrinking collet

24



SHRINK FIT CHUCK

26



SCREW-IN MILL CUTTER

Basic holder

26



HYDRO CLAMPING CHUCK

26



SQUARE SHOULDER / PLUNGE MILL CUTTER

27



TEST MANDREL

27



MASTER SHANKS

VDI DIN 69880 /
HSK Form A ISO 12164
SK DIN 69871 AD

27



MOUNTING BLOCK

28



REDUCING SLEEVE

29



BLANK

29



CLOSING PLUG

29



TAPER CLEANER

BENZ Solidfix® / Collet chuck




29

► Further adapters (such e.g. Softsynchro, BENZ Solidfix® static, MQL-capable adapter) upon request.
Please contact our Customer Support Team.




BENZ CAPTO™

	COLLET CHUCK 8° Type ER	32		WELDON for parallel shanks DIN 1835B	32
	MILLING ARBOR	33		BLANK	33
	CLOSING PLUG	33		TAPER CLEANER BENZ CAPTO™	33

COLLET CHUCK

	CLAMPING NUT	35		SEAL RING	36
	COLLET CHUCK	36			

MISCELLANEOUS

	WRENCH	39		KEY BLOCK	41
	INSERT, BASE HOLDER	41			

BENZ SOLIDFIX®

TOOL ADAPTERS



BENZ SOLIDFIX®

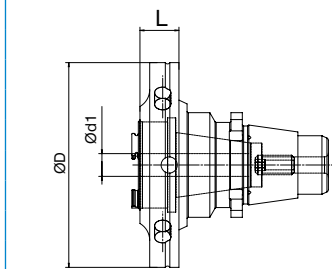
TOOL ADAPTERS

Collet Chuck 8° Type ER | internal clamping nut



▶ Technical Data

Drawing



Size	Type	D	d1	L	Order No.
S1	ER11	32	1-7	9	691.130E1A09
S2	ER16	40	1-10	13	692.130E3A13
S3	ER16	50	1-10	10	693.130E3A10
S3	ER20	50	2-13	14	693.130E4A14
S4	ER16	63	1-10	11	694.130E3A11
S4	ER20	63	2-13	12	694.130E4A12
S4	ER25	63	2-16	20	694.130E5A20
S5	ER32	75	2-20	22	695.130E6A22

▶ Note - Collet not included in scope of supply

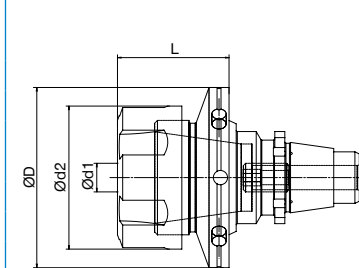
Accessories Page 34

Collet Chuck 8° Type ER | external clamping nut



▶ Technical Data

Drawing



Size	Type	D	d1	d2	L	Order No.
S1	ER11M	32	1-7	16	20	691.130M120
S1	ER16M	32	1-10	22	30	691.130M230
S2	ER16M	40	1-10	22	30	692.130M230
S2	ER20	40	2-13	34	31	692.130E431
S3	ER16M	50	1-10	22	32	693.130M232
S3	ER20	50	2-13	34	30	693.130E430
S3	ER25	50	2-16	42	34	693.130E534
S4	ER16M	63	1-10	22	30	694.130M232
S4	ER32	63	2-20	50	39	694.130E639
S5	ER32	75	2-20	50	40	695.130E640
S5	ER40	75	3-26	63	46	695.130E746

▶ Note - Collet not included in scope of supply

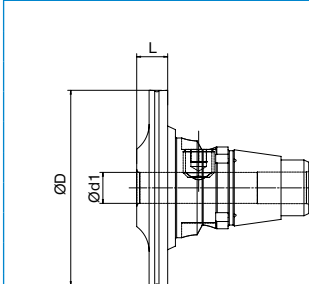
Accessories Page 34

Weldon For Parallel Shanks DIN 1835 B | short design



▶ Technical Data

Drawing



Size	D	d1	L	Order No.
S1	32	3	4	691.1400304
S1	32	4	5	691.1400405
S2	40	4	5	692.1400405
S2	40	6	7	692.1400607
S3	50	6	6	693.1400606
S3	50	8	8	693.1400808
S4	63	6	7	694.1400607
S4	63	8	8	694.1400808
S4	63	10	10	694.1401010
S4	63	12	12	694.1401212
S5	75	6	10	695.1400610
S5	75	8	10	695.1400810
S5	75	10	10	695.1401010
S5	75	12	10	695.1401210
S5	75	14	12	695.1401412
S5	75	16	12	695.1401612

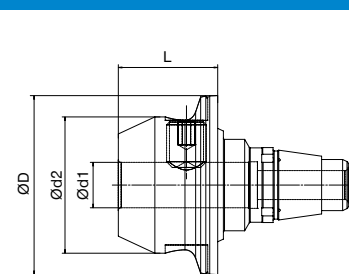
▶ shortest possible design (length = L)

Weldon For Parallel Shanks DIN 1835 B | standard design



▶ Technical Data

Drawing



Size	D	d1	d2	L	Order No.
S1	32	6	25	24	691.1400624
S2	40	8	28	25	692.1400825
S3	50	10	35	28	693.1401028
S3	50	12	42	32	693.1401232
S3	50	16	48	35	693.1401635
S4	63	14	48	32	694.1401432
S4	63	16	48	35	694.1401635
S4	63	18	50	35	694.1401835
S4	63	20	52	38	694.1402038
S5	75	18	50	36	695.1401836
S5	75	20	52	38	695.1402038
S5	75	25	65	40	695.1402540

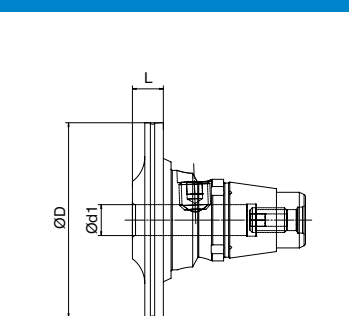
▶ shortest possible design (length = L)

Whistle Notch For Parallel Shanks DIN 1835 E | short design



▶ Technical Data

Drawing



Size	D	d1	L	Order No.
S2	40	6	9	692.1410609
S3	50	6	6	693.1410606
S3	50	8	8	693.1410808
S4	63	6	7	694.1410607
S4	63	8	8	694.1410808
S4	63	10	10	694.1411010
S4	63	12	12	694.1411212
S5	75	6	10	695.1410610
S5	75	8	10	695.1410810
S5	75	10	10	695.1411010
S5	75	12	10	695.1411210
S5	75	14	12	695.1411412
S5	75	16	12	695.1411612

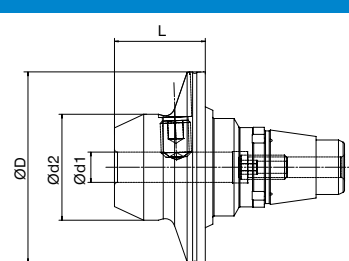
▶ shortest possible design (length = L)

Whistle Notch For Parallel Shanks DIN 1835 E | standard design



▶ Technical Data

Drawing



Size	D	d1	d2	L	Order No.
S1	32	6	25	24	691.1410624
S2	40	8	28	25	692.1410825
S3	50	10	35	28	693.1411028
S3	50	12	42	32	693.1411232
S3	50	16	48	35	693.1411635
S4	63	14	48	32	694.1411432
S4	63	16	48	35	694.1411635
S4	63	18	50	35	694.1411835
S4	63	20	52	38	694.1412038
S5	75	18	50	36	695.1411836
S5	75	20	52	38	695.1412038
S5	75	25	65	40	695.1412540

▶ shortest possible design (length = L)

BENZ SOLIDFIX®

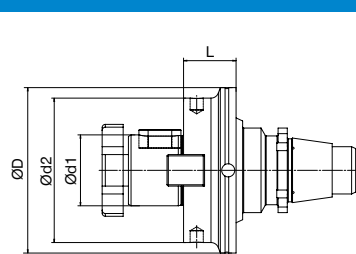
TOOL ADAPTERS

Milling Arbor



Technical Data

Drawing



Size	D	d1	d2	L	Order No.
S2	40	16	34	11	692.2311611
S3	50	16	34	12	693.2311612
S3	50	22	48	14	693.2312214
S4	63	16	34	14	694.2311614
S4	63	22	48	14	694.2312214
S4	63	27	55	14	694.2312714
S5	75	22	48	12	695.2312212
S5	75	27	55	14	695.2312714
S5	75	32	62	15	695.2313215

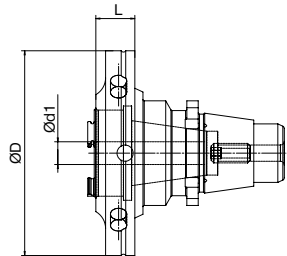
Accessories Page 40

Collet Chuck | with TER-shrinking collet



Technical Data

Drawing



Size	Type	D	d1	L	Order No.
S1	TER 16	32	3	30*	691.1560330
S1	TER 16	32	4	30*	691.1560430
S1	TER 16	32	6	30*	691.1560630
S2	TER 16	40	3	13	692.1560313
S2	TER 16	40	4	13	692.1560413
S2	TER 16	40	6	13	692.1560613
S2	TER 16	40	8	13	692.1560813
S3	TER 20	50	6	14	693.1560614
S3	TER 20	50	8	14	693.1560814
S3	TER 20	50	10	14	693.1561014
S4	TER 25	63	6	20	694.1560620
S4	TER 25	63	8	20	694.1560820
S4	TER 25	63	10	20	694.1561020
S4	TER 25	63	12	20	694.1561220
S5	TER 32	75	6	22	695.1560622
S5	TER 32	75	8	22	695.1560822
S5	TER 32	75	10	22	695.1561022
S5	TER 32	75	12	22	695.1561222
S5	TER 32	75	16	22	695.1561622

▶ Partner

- ▶ Scope of supply: Ultra-precision collet with TER-collet chuck
- ▶ MQL-capable adapter on request

* Size S1: Utilization of a collet chuck with external mini nut

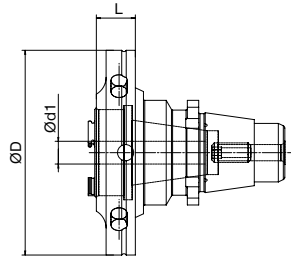
Accessories Page 34

Ultra-Precision Collet | for TER-collet chuck



▶ Technical Data

Drawing



Size	Type	D	d1	L	Order No.
S1	ER 16M	32	1-10	30	691.130M230UP
S2	ER 16	40	1-10	13	692.130E3A13UP
S3	ER 20	50	2-13	14	693.130E4A14UP
S4	ER 25	63	2-16	20	694.130E5A20UP
S5	ER 32	75	2-20	22	695.130E6A22UP

- ▶ UP-collet chucks: differ versus standard collet chucks by being extremely precise for high speed machining

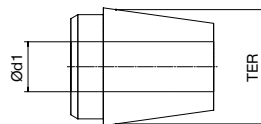
 Accessories Page 34

TER-Shrinking Collet



▶ Technical Data

Drawing



Size	Type	d1	Order No.
S1/S2	TER 16	3	B134-426E-0300DS
S1/S2	TER 16	4	B134-426E-0400DS
S1/S2	TER 16	6	B134-426E-0600DS
S2	TER 16	8	B134-426E-0800DS
S3	TER 20	6	B134-428E-0600DS
S3	TER 20	8	B134-428E-0800DS
S3	TER 20	10	B134-428E-1000DS
S4	TER 25	6	B134-430E-0600DS
S4	TER 25	8	B134-430E-0800DS
S4	TER 25	10	B134-430E-1000DS
S4	TER 25	12	B134-430E-1200DS
S5	TER 32	6	B134-470E-0600DS
S5	TER 32	8	B134-470E-0800DS
S5	TER 32	10	B134-470E-1000DS
S5	TER 32	12	B134-470E-1200DS
S5	TER 32	16	B134-470E-1600DS

- ▶ alternative collet chuck sizes

BENZ SOLIDFIX®

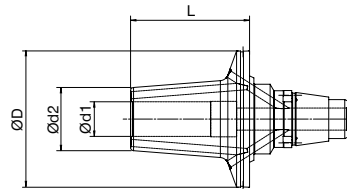
TOOL ADAPTERS

Shrink Fit Chuck



▶ Technical Data

Drawing



Size	D	d1	d2	L	Order No.
S3	50	6	21	45	693.1520645KB
S3	50	8	21	45	693.1520845KB
S3	50	10	24	50	693.1521050KB
S3	50	12	24	55	693.1521255KB
S4	63	6	21	50	694.1520650KB
S4	63	8	21	50	694.1520850KB
S4	63	10	24	50	694.1521050KB
S4	63	12	24	55	694.1521255KB
S4	63	14	29	55	694.1521455KB
S4	63	16	29	55	694.1521655KB
S4	63	20	33	60	694.1522060KB
S5	75	20	33	65	695.1522065KB
S5	75	25	44	70	695.1522570KB

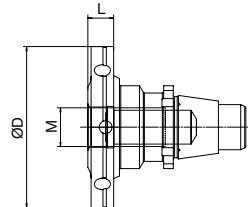
- ▶ one piece shrink fit chuck
- ▶ coolant centrally or via hole in the sleeve (without coolant holes on request)
- ▶ MQL shrink fit chuck on request

Screw-In Mill Cutter | short design



▶ Technical Data

Drawing



Size	D	M	L	Order No.
S3	50	M10	8	693.2861008
S3	50	M12	8	693.2861208
S4	63	M12	9	694.2861209
S4	63	M16	9	694.2861609
S5	75	M12	10	695.2861210
S5	75	M16	10	695.2861610

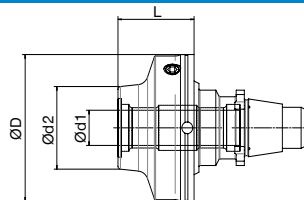
- ▶ Basic holder fits all standard threaded arbors (e.g. Seco, Kennametal...)

Hydro Clamping Chuck



▶ Technical Data

Drawing



Size	D	d1	d2	L	Order No.
S3	50	12	28	28	693.1581228
S4	63	12	28	28	694.1581228
S5	75	20	38	30	695.1582030

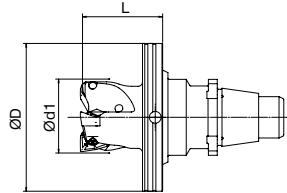
- ▶ Version two-part with Hydrostar-insert on request

Square Shoulder / Plunge Mill Cutter




▶ Technical Data

Drawing



Size	D	d1	L	Order No.
S3	50	25	28	693.6502528S001
S4	63	32	33	694.6503233S001

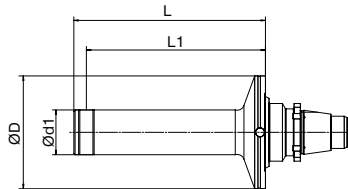
- ▶ Cooperation with 
- ▶ indexable inserts not included in scope of supply / Can be supplied by Paul Horn GmbH (Type DA32)

Test Mandrel



▶ Technical Data

Drawing



Size	D	d1	L	*L1	Order No.
S1	32	12	55	50	691.2471255
S2	40	16	68	63	692.2471668
S3	50	20	87	80	693.2472087
S4	63	25	107	100	694.24725107
S5	75	32	134	125	695.24732134

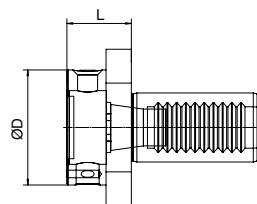
- ▶ Scope of supply: case with test certificate
- *Measuring point

Master Shank | VDI



▶ Technical Data

Drawing



Size	D	VDI	L	IC	Order No.
S1	32	20	22		112.251S1022VE
S2	40	25	25		325.251S2025VE
S2	40	30	25		113.251S2025VE
S3	50	30	32		113.251S3028VE
S3	50	30	32	✓	113.251S3032R
S3	50	40	28		114.251S3028VE
S3	50	40	28		114.251S4030VE
S4	63	40	32	✓	114.251S4032R
S5	75	50	32		115.251S5032VE
S5	75	50	40	✓	115.251S5040R

BENZ SOLIDFIX®

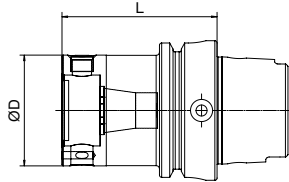
TOOL ADAPTERS

Master Shank | HSK



▶ Technical Data

Drawing



Size	D	HSK-A	L	Order No.
S1	32	63	55	711.251S1055VE
S2	40	63	62	711.251S2062VE
S3	50	63	70	711.251S3070VE
S4	63	63	75	711.251S4075VE
S4	63	63	80	713.251S4080VE
S5	75	100	80	711.251S5080VE
S5	75	100	90	713.251S5090VE

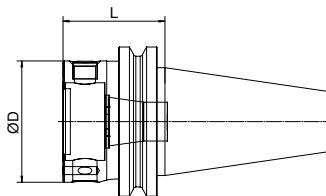
- ▶ Internal coolant ready (coolant supply transfer needed)

Master Shank | SK



▶ Technical Data

Drawing



Size	D	SK	L	Order No.
S1	32	30	30	090.251S1030VE
S2	40	30	40	090.251S2040VE
S3	50	40	42	040.251S3042VE
S3	50	50	37	042.251S3037VE
S4	63	40	55	040.251S4055VE
S4	63	50	40	042.251S4040VE
S5	75	40	60	040.251S5060VE
S5	75	50	52	042.251S5052VE

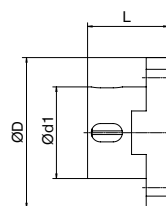
- ▶ Internal coolant ready (precision pull stud)

Mounting Block



▶ Technical Data

Drawing



Size	D	d1	L	Order No.
S1	62	31	30	B300-4-S1
S2	67	40	38	B300-4-S2
S3	82	50	44	B300-4-S3
S4	96	65	50	B300-4-S4
S5	116	75	60	B300-4-S5

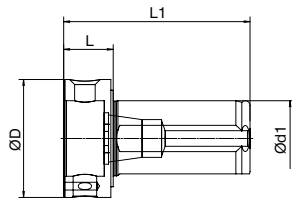
- ▶ Note - no integrated clamping mechanism

Reducing sleeve



► Technical Data

Drawing



Size	D	d1	L	L1	Order No.
S2	40	25	17	65	B570-25S2
S3	50	32	21	79	B570-32S3
S4	63	40	22	94	B570-40S4

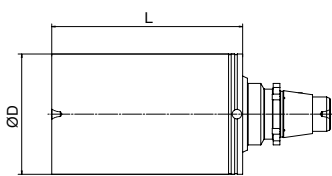
- Used for boring bars or combination holders

Blank



► Technical Data

Drawing



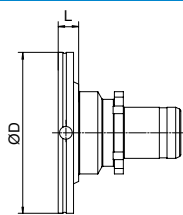
Size	D	L	Order No.
S1	32	63	691.1023263
S2	40	80	692.1024080
S3	50	100	693.10250100
S4	63	125	694.10263125
S5	75	160	695.10275160

Closing Plug



► Technical Data

Drawing



Size	D	L	Order No.
S1	32	3,5	691.581S
S2	40	4	692.581S
S3	50	5	693.581S
S4	63	6	694.581S
S5	75	8	695.581S

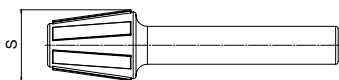
- made of steel

Taper Cleaner | BENZ Solidfix®/ Collet Chuck



► Technical Data

Drawing



Size (S)	Size (ER)	Order No.
S1	ER 11	B069-ER11
S2	ER 16	B069-ER16
S3	ER 20	B069-ER20
S4	ER 25	B069-ER25
S5	ER 32	B069-ER32

BENZ CAPTO™

TOOL ADAPTERS





BENZ CAPTO™

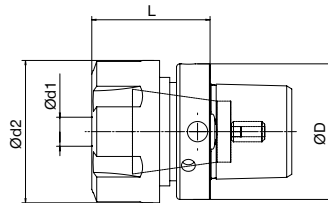
TOOL ADAPTERS

Collet Chuck 8° Type ER | external clamping nut



▶ Technical Data

Drawing

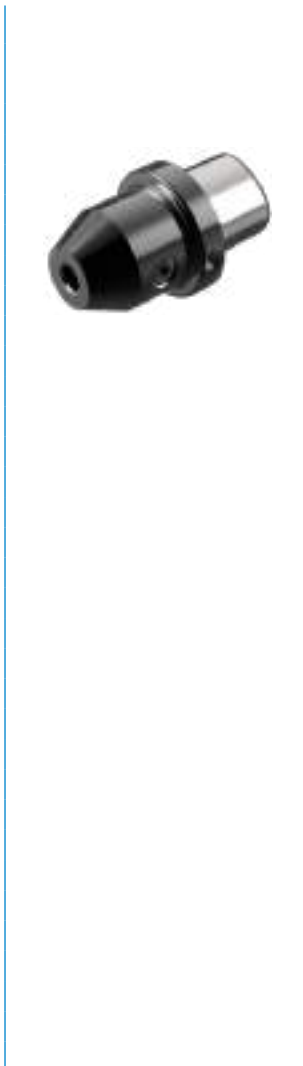


Size	Type	D	d1	d2	L	Order No.
C3	ER11	32	1-7	19	22	550.130E122
C3	ER16	32	1-10	28	30	550.130E330
C3	ER20	32	2-13	34	35	550.130E435
C3	ER25	32	2-16	42	44	550.130E544
C4	ER16	40	1-10	28	27	551.130E327
C4	ER20	40	2-13	34	32	551.130E432
C4	ER25	40	2-16	42	35	551.130E535
C4	ER32	40	2-20	50	52	551.130E652
C5	ER16	50	1-10	28	29	552.130E329
C5	ER25	50	2-16	42	34	552.130E534
C5	ER32	50	2-20	50	41	552.130E641
C5	ER40	50	3-26	63	58	552.130E758
C6	ER32	63	2-20	50	40	553.130E640
C6	ER40	63	3-26	63	46	553.130E746

▶ without gripper groove

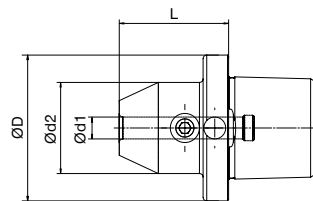
Accessories Page 34

Weldon For Parallel Shanks DIN 1835 B | standard design



▶ Technical Data

Drawing



Size	D	d1	d2	L	Order No.
C3	32	6	25	33	550.1400633
C3	32	8	28	33	550.1400833
C3	32	10	35	37	550.1401037
C3	32	12	42	42	550.1401242
C3	32	14	44	43	550.1401443
C3	32	16	48	51	550.1401651
C4	40	6	25	30	551.1400630
C4	40	8	28	30	551.1400830
C4	40	10	35	34	551.1401034
C4	40	12	42	39	551.1401239
C4	40	14	44	39	551.1401439
C4	40	16	48	43	551.1401643
C4	40	18	50	43	551.1401843
C4	40	20	52	45	551.1402045
C5	50	6	25	29	552.1400629
C5	50	8	28	29	552.1400829
C5	50	10	35	33	552.1401033
C5	50	12	42	38	552.1401238
C5	50	14	44	38	552.1401438
C5	50	16	48	41	552.1401641
C5	50	18	50	42	552.1401842
C5	50	20	52	44	552.1402044
C5	50	25	65	52	552.1402552
C6	63	6	25	28	553.1400628
C6	63	8	28	28	553.1400828
C6	63	10	35	32	553.1401032
C6	63	12	42	37	553.1401237
C6	63	14	44	37	553.1401437
C6	63	16	48	40	553.1401640
C6	63	18	50	41	553.1401841
C6	63	20	52	43	553.1402043
C6	63	25	65	52	553.1402552

▶ without gripper groove

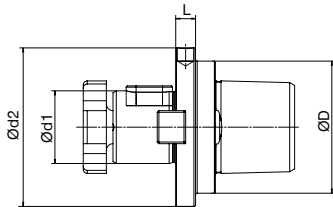
Milling Arbor



▶ without gripper groove

▶ Technical Data

Drawing



Size	D	d1	d2	L	Order No.
C3	32	16	34	13	550.2311613
C3	32	22	48	17	550.2312217
C4	40	22	48	16	551.2312216
C4	40	27	51	19	551.2312719
C5	50	27	55	11	552.2312711
C5	50	32	62	22	552.2313222
C6	63	27	63	11	553.2312711
C6	63	32	63	16	553.2313216

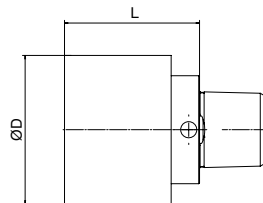
Accessories Page 40

Blank



▶ Technical Data

Drawing



Size	D	L	Order No.
C3	47	50	550.1024750
C4	57	63	551.1025763
C5	72	67	552.1027267
C6	92	67	553.1029267

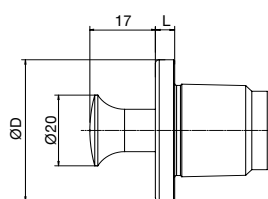
Closing Plug



▶ made of steel

▶ Technical Data

Drawing



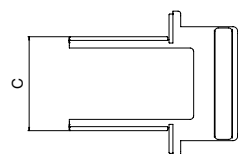
Size	D	L	Order No.
C3	32	5	550.581S
C4	40	5	551.581S
C5	50	6	552.581S
C6	63	7	553.581S

Taper Cleaner | BENZ CAPTO™



▶ Technical Data

Drawing



Size (C)	Order No.
C3	B069-C3
C4	B069-C4
C5	B069-C5
C6	B069-C6
C8	B069-C8

COLLET CHUCK ACCESSORIES

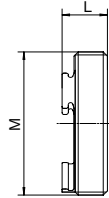


Clamping Nut | internal



▶ Technical Data

Drawing



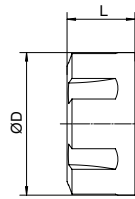
Size	M	L	Order No.
ER 11	M18x1	7,5	B135-E1AX
ER 16	M24x1	7,6	B135-E3AX
ER 20	M28x1,5	8,5	B135-E4AX
ER 25	M32x1,5	8,8	B135-E5AX
ER 32	M40x1,5	9,8	B135-E6AX
ER 40	M50x1,5	11,7	B135-E7AX

Clamping Nut | form D+E



▶ Technical Data

Drawing



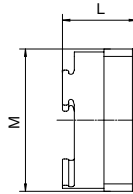
Size	D	L	Order No.
ER 11M	19	11	B135-M1
ER 16M	28	17	B135-M3
ER 20M	34	19	B135-M4
ER 20	34	19	B135-E4
ER 25	42	20	B135-E5
ER 32	50	22	B135-E6
ER 40	63	25	B135-E7

Clamping Nut For Tools With Internal Coolant | System Regofix internal



▶ Technical Data

Drawing



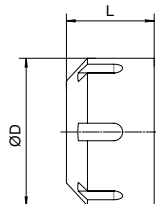
Size	M	L	Order No.
ER 16	18x1	12,5	B135-E3AXC
ER 20	24x1	13,5	B135-E4AXC
ER 25	28x1,5	13,8	B135-E5AXC
ER 32	32x1,5	14,9	B135-E6AXC
ER 40	40x1,5	16,6	B135-E7AXC

Clamping Nut For Tools With Internal Coolant | System Regofix external



▶ Technical Data

Drawing



Size	D	L	Order No.
ER 11			on request
ER 16	28	22,5	B135-H3A
ER 20	34	24	B135-H4A
ER 25	42	25	B135-H5A
ER 32	50	27,5	B135-H6A
ER 40	63	30,5	B135-H7A

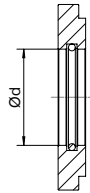
COLLET CHUCK ACCESSORIES

Seal Ring



Technical Data

Drawing



Size	d	Pitch	Order No.
ER 16	1-10	0,5	B137-E3...
ER 20	1-13	0,5	B137-E4...
ER 25	2-16	0,5	B137-E5...
ER 32	2-20	0,5	B137-E6...
ER 40	4-26	0,5	B137-E7...

Order No.

ER 16	B137-E3-	<input type="checkbox"/>	
d=6	0600		

Example: **B137-E3-0600**

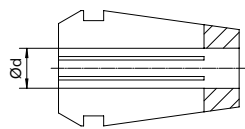
- ▶ Inserted seal can be up to 0,5 mm smaller than nominal range d

Collet Chuck | Regofix Form B



Technical Data

Drawing



Size	d	Pitch	Order No.
ER 11	1-7 ¹	0,5	B134-424E...
ER 16	1-10 ¹	0,5	B134-426E...
ER 20	1-13 ²	1	B134-428E...
ER 25	1-16 ²	1	B134-430E...
ER 32	3-20 ²	1	B134-470E...
ER 40	4-26 ²	1	B134-472E...

Order No.

ER 16	B134-426E-	<input type="checkbox"/>	
d=6	0600		

Example: **B134-424E-0600**

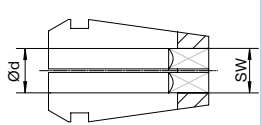
- ▶ ¹ Collet chuck clamping can be up to 0,5 mm smaller than nominal range d
- ▶ ² Collet chuck clamping can be up to 1 mm smaller than nominal range d

Collet Chuck For Tap | Regofix with internal square section



Technical Data

Drawing



Size	d	width across flats	Order No.
ER 16	4-10	3,15-7	B134-E3...
ER 20	4-13	3,15-9	B134-E4...
ER 25	4-16	3,15-16	B134-E5...
ER 32	4-20	3,15-20	B134-E6...
ER 40	6-22	6-22	B134-E7...

Order No.

ER 16	B134-E3-	<input type="checkbox"/>	<input type="checkbox"/>
d=6	0600		
SW=4,9			49

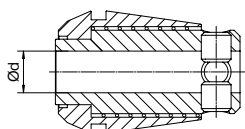
Example: **B134-E3-0600-49**

Collet Chuck For Tap | Regofix external square section with length compensation



Technical Data

Drawing



Size	d	Order No.
ER 11	1-7	B134-A2...
ER 16	1-10	B134-A3...
ER 20	1-13	B134-A4...
ER 25	1-16	B134-A5...
ER 32	3-20	B134-A6...
ER 40	4-26	B134-A7...

Order No.

ER 16	B134-A2-	<input type="checkbox"/>	
d=6	0600		

Example: **B134-A2-0600**

► ORDER SAMPLE

HOW TO ORDER
CORRECTLY

- Get the right order no. according to this system:

Order No.	B137-	<input type="checkbox"/>	<input type="checkbox"/>
ER 32	E6		
∅ 8-8,5 mm		0850	

WRENCHES

ACCESSORIES

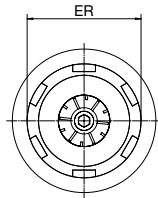


Collet Wrench | external clamping nut



▶ Technical Data

Drawing



Size

Order No.

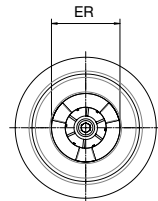
ER 11M	B136-M1
ER 16M	B136-M3
ER 20M	B136-M3
ER 20	B136-E4
ER 25	B136-E5
ER 32	B136-E6
ER 40	B136-E7

Collet Wrench | internal clamping nut



▶ Technical Data

Drawing



Size

Order No.

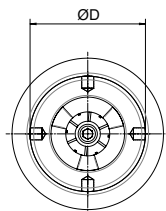
ER 11	B136-E1AX
ER 16	B136-E3AX
ER 20	B136-E4AX
ER 25	B136-E5AX
ER 32	B136-E6AX
ER 40	B136-E7AX

Hook Wrench



▶ Technical Data

Drawing



Spindle-Ø D

Order No.

12-14	D01810B012014
16-18	D01810B016018
20-22	D01810B020022
25-28	D01810B025028
30-32	D01810B030032
34-36	D01810B034036
40-42	D01810B040042
45-50	D01810B045050
52-55	D01810B052055
58-62	D01810B058062
68-75	D01810B068075
80-90	D01810B080090
95-100	D01810B095100

WRENCHES

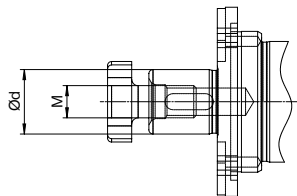
ACCESSORIES

Wrench DIN 6368 | for cutter retaining screws



► Technical Data

Drawing



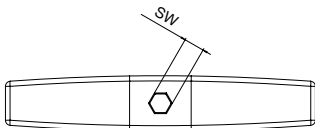
Milling Arbor-Ø d	M	Order No.
16	8	D06368-080
22	10	D06368-100
27	12	D06368-120
32	16	D06368-160

INBUS T-Wrench | for BENZ Solidfix® and BENZ CAPTO™ actuation



► Technical Data


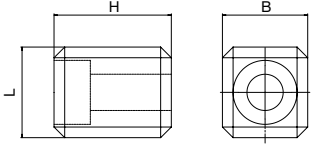
Drawing




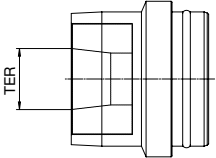
Size BENZ Solidfix®	Size BENZ CAPTO™	SW	Order No.
S1		3	KL8317-45039-SW3
S2		4	KL8317-44982-SW4
S3		5	KL8317-45013-SW5
S4 / S5	C3	6	KL8317-45039-SW6
	C4	8	KL8317-45039-SW8
	C5	10	KL8317-45039-SW10
	C6	14	KL8317-45039-SW14

MISCELLANEOUS ACCESSORIES

Key Block DIN2097 | for milling arbor

	<p>▶ Technical Data</p>					
	<p>Drawing</p> 	d1	L	B	H	Order No.
		16	8,5	8	11	B245-66
		22	11	10	8,6	B245-81
		27	10	12	9,3	B245-126
		32	12	14	14	B245-117

Insert, Base Holder

	<p>▶ Technical Data</p>		
		Size	Type
	S2	Einsatz TER 16	B136-426E-DSE
	S3	Einsatz TER 20	B136-428E-DSE
	S4	Einsatz TER 25	B136-430E-DSE
	S5	Einsatz TER 32	B136-470E-DSE
	S2 - S5	Base holder with length adjustment	B136-4XXE-DSG

- ▶ Base holder and respective insert are needed

Additional accessories

- ▶ Diebold-shrinking devices with stored parameters for shrinking of the TER-collet chucks
- ▶ Fluid cooler FKS 03
- ▶ Adapter rings

▶ **Additional accessories on request**

Please contact our Customer Support Team.

BENZ MODULAR QUICK CHANGE SYSTEMS

PRODUCT EXSAMPLES

▶ PRODUCT EXAMPLE

MACHINING
CENTER



BENZ right angle head
FORTE WWX 90° recessed,
with Modular Quick Change
System BENZ Solidfix® and
HSK-A63 machine
connection

▶ PRODUCT EXAMPLE

CNC LATHE
TURRET



Radial tool with Modular
Quick Change System
BENZ CAPTO™, with VDI
machine connection Sauter
Trifix Revolver and fixed
flange connection



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USAGE NOTE

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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.

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