

MODULAR QUICK CHANGE SYSTEMS

BENZ Solidfix® | BENZ CAPTO™ | BENZ Nanofix®

Tooling technology

Metal | Wood | Composites machining



BENZ GMBH

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.

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.



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SYSTEM BENEFITS

BENZ SOLIDFIX® | BENZ CAPTO™ | BENZ NANOFIX®

An investment worth making

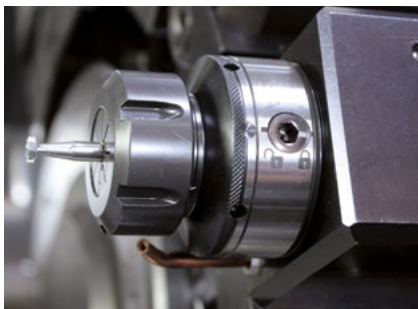
Beside higher rpms and higher accuracy the reduction of set up and machine down times is the main focus in the manufacturing industry. An important success factor is the integration of a modular tool interface.

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.

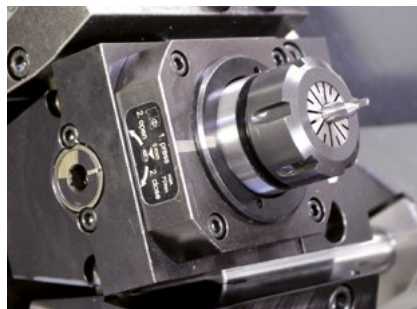
You as the customer increase the valuable production time of your machine while at the same time saving costs: Due to the modular design only the adapters are being changed - the base tool holder stays in the machine. This reduces the necessity of buying additional tools to a minimum.

With BENZ Solidfix®, BENZ CAPTO™ und BENZ Nanofix® you have two of the most advanced and sophisticated modular quick change systems available to you.

BENZ Solidfix®



BENZ CAPTO™



BENZ Nanofix®



PERFORMANCE. PRECISION. HANDLING. SAFETY.



Minimises setup and non-productive time / increases productivity
by changing the pre-set tool within seconds



Low investment overhead,
because the angle head remains on the machine and only an adapter needs to be changed, fewer angle heads are needed overall

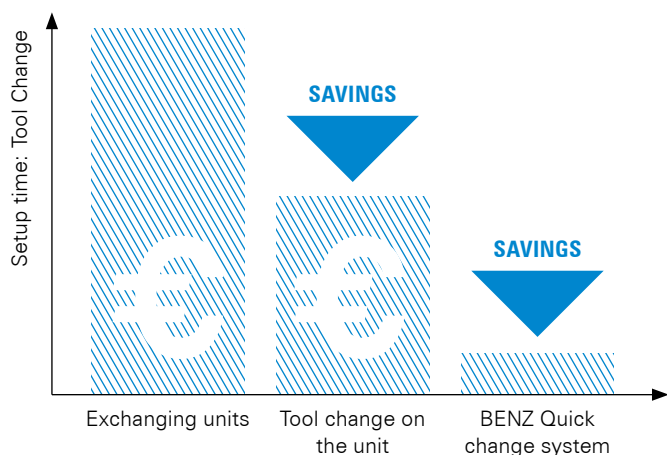


Easy handling
One-hand operation without a special tool



Operating safety
Cannot become detached accidentally

SAVINGS WITH BENZ QUICK CHANGE SYSTEMS



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.

FIELD OF APPLICATION

Can be used on all common machines.

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®, BENZ CAPTO™ and BENZ Nanofix® 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.

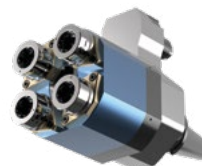
Lathes



Machining centers



Turning-/milling centers



MODULAR QUICK CHANGE SYSTEM

BENZ SOLIDFIX®

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.



PRODUCT BENEFITS

Performance

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

Precision

- high concentricity: < 5 µm auf 30 mm
- high repeatability
- central, cross-force-free transmission of forces
- play-free centering of taper

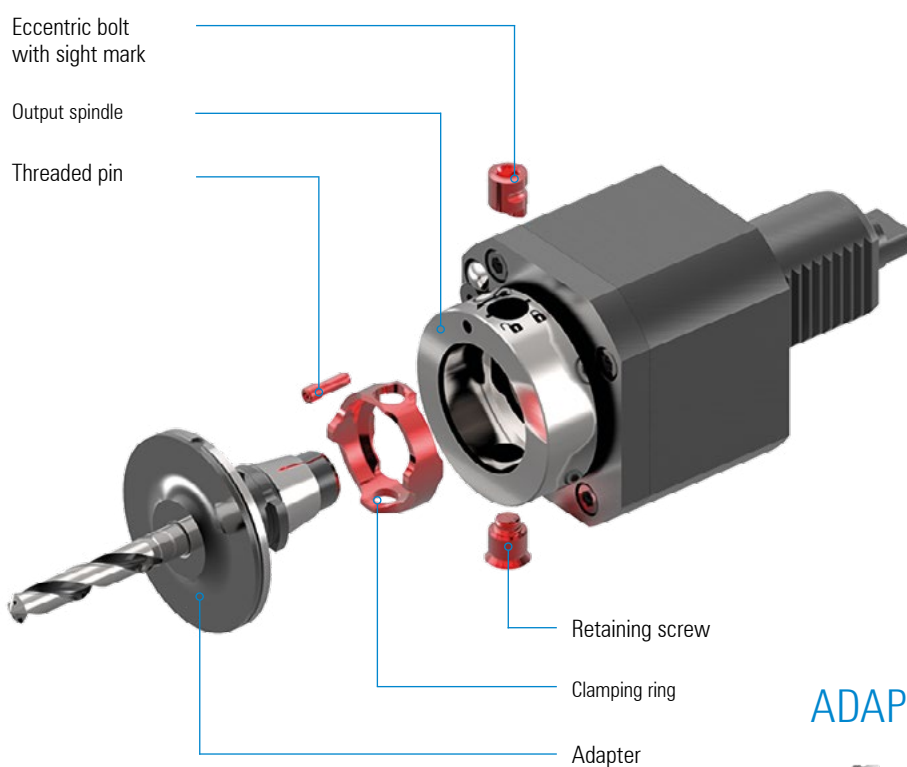
Handling

- 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

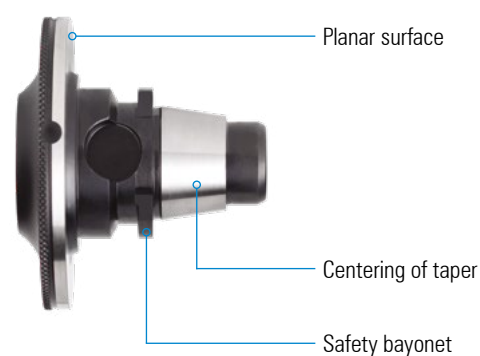
Safety

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

BENZ SOLIDFIX® - SYSTEM DESIGN



ADAPTER



SYSTEM OVERVIEW

Size	Technical data	
	T* [Nm]	Size Inbus wrench
S1	25	SW 3
S2	50	SW 4
S3	100	SW 5
S4	200	SW 6
S5	400	SW 6

*transmittable torque of interface



IC-capable

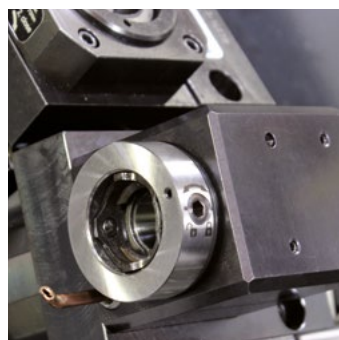


MQL-capable Adapter
on request

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 the loosed position.



Loose position:
Marking is sitting on open
lock



Clamped position:
Marking is sitting on closed
lock



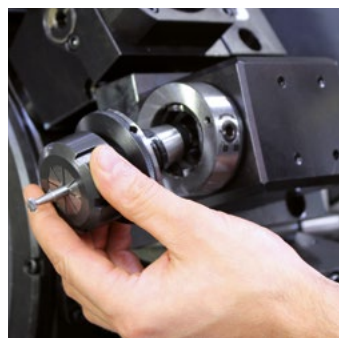
Step 2: Inserting the adapter

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.

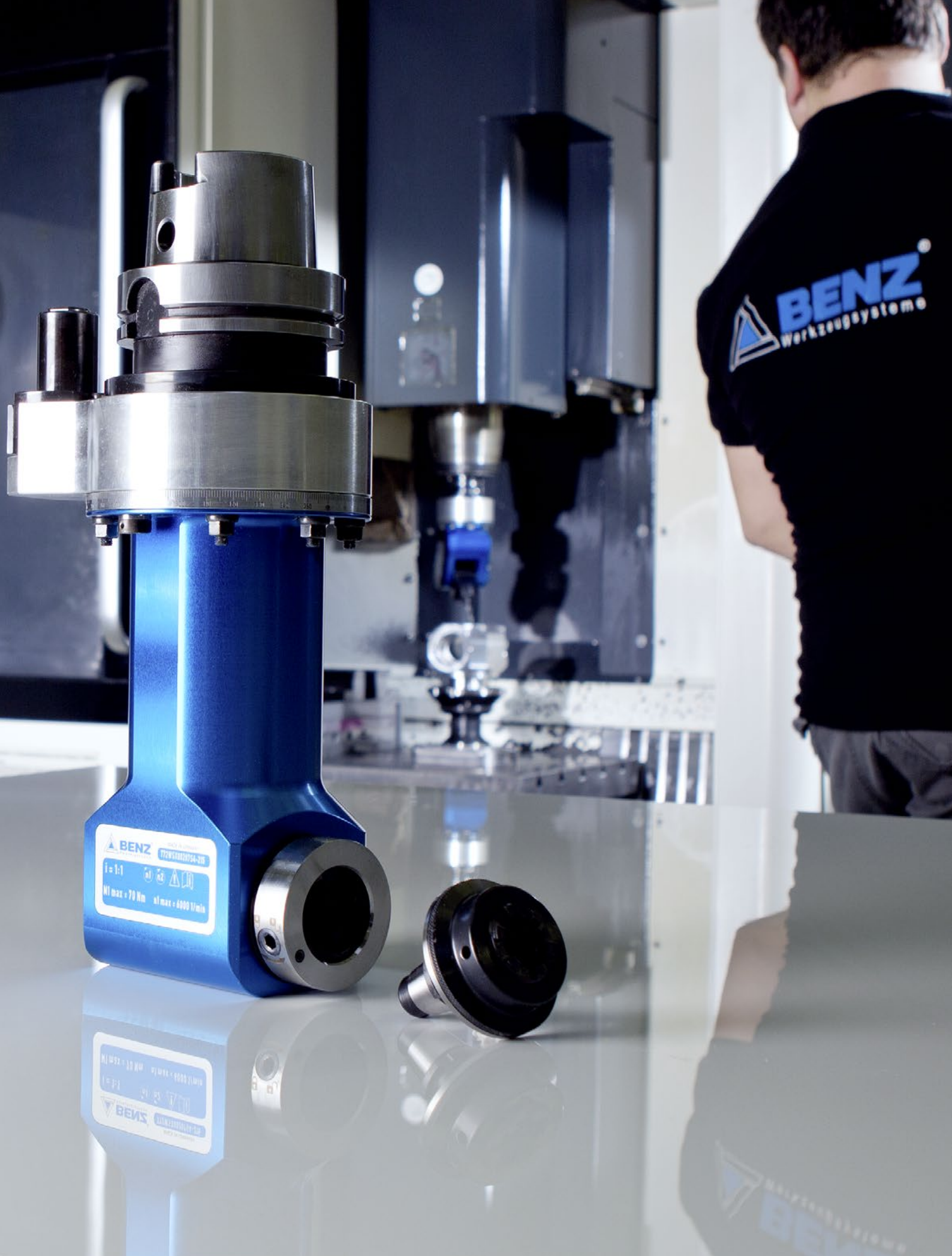


Step 4: Loosening and changing the adapter

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.





MODULAR QUICK CHANGE SYSTEM

BENZ CAPTO™

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.



PRODUKT BENEFITS

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

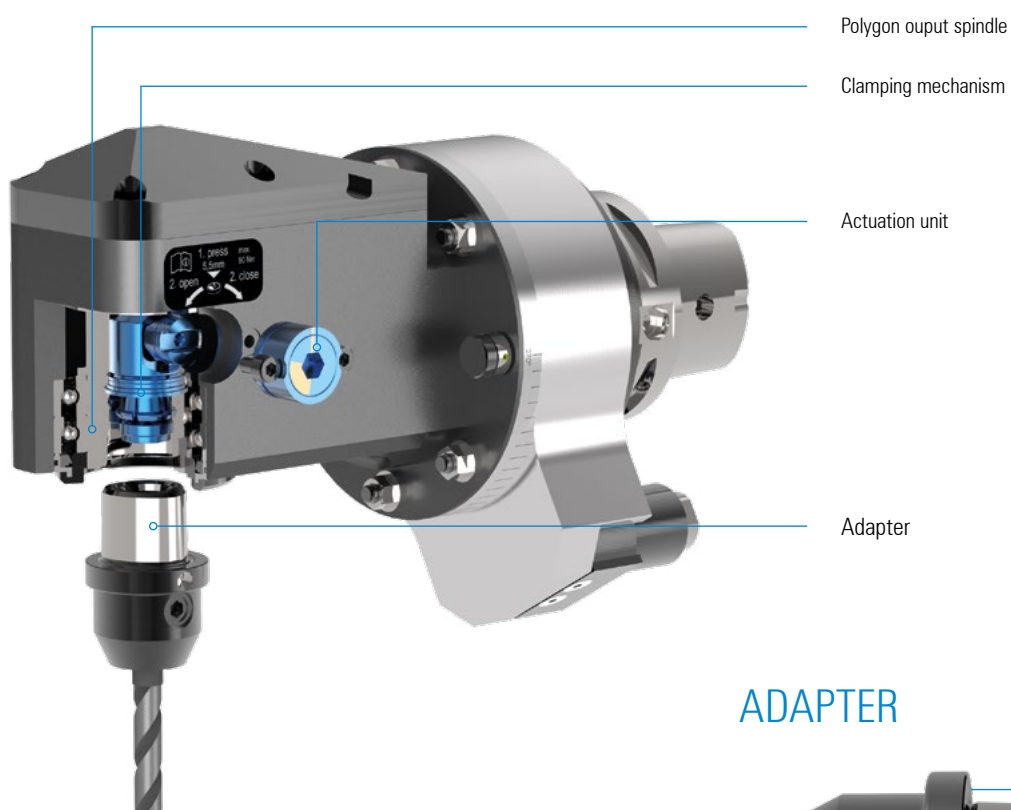
Handling

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

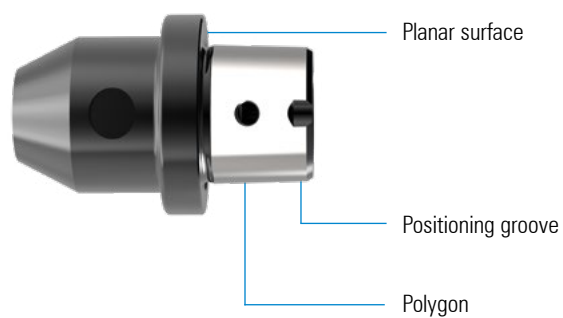
Safety

- 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

BENZ CAPTO™ - SYSTEM DESIGN



ADAPTER



SYSTEM OVERVIEW

Size	Technical data	
	T* [Nm]	Size Inbus wrench
C3	250	SW 6
C4	500	SW 8
C5	1000	SW 10
C6	2000	SW 12

*transmittable torque of the polygon

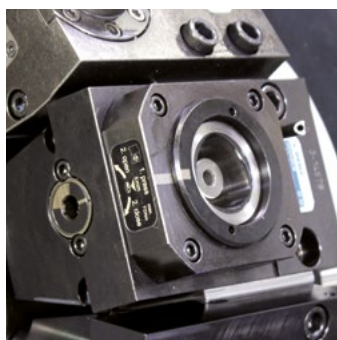


IC-capable

MODULAR QUICK CHANGE SYSTEM

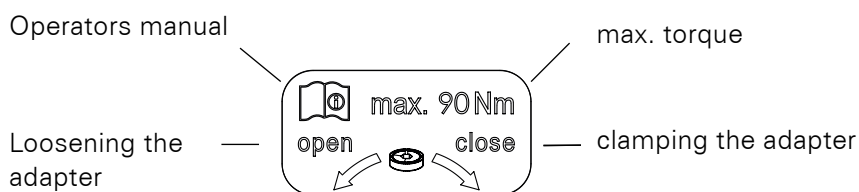
BENZ CAPTO™

TOOL CHANGE



Step 1: Familiarize yourself with the symbols

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



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: Getting markings in a line

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.



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.



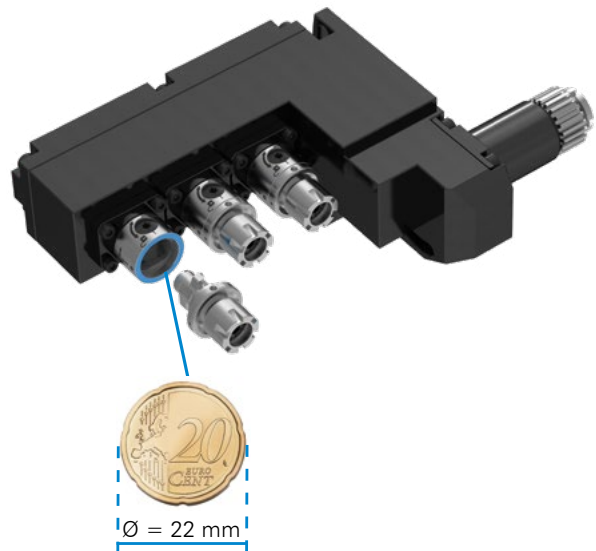
MODULAR QUICK CHANGE SYSTEM

BENZ NANOFIX®

Quick change in confined spaces

BENZ Nanofix® is a new quick-change interface that is convincing thanks to its extremely compact design. The outer diameter of 22 mm is designed for

minimal spindle distances and is therefore particularly suitable for use in confined spaces.



PRODUKT BENEFITS

Performance

- compact design
- large planar contact surface
- high system rigidity (suitable for milling)
- high torque transmission
- high speeds due to neutrally balanced design

Precision

- very high concentricity < 5 µm on 30 mm
- high repeat accuracy
- play-free centering of taper
- short projection

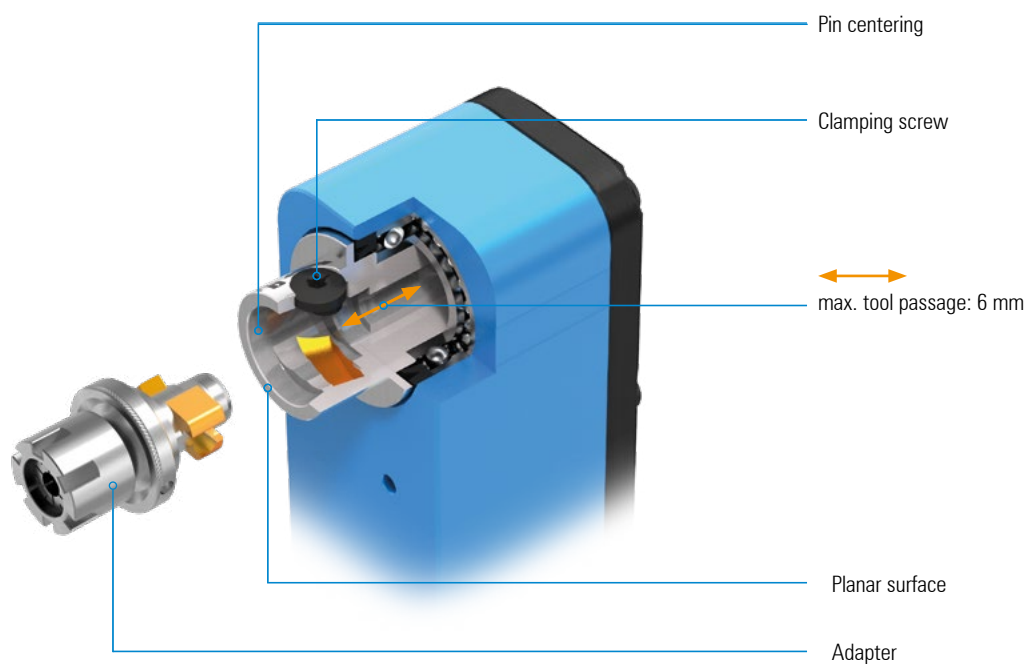
Handling

- quick tool change < 20 seconds
- one-hand operation
- integrated ejection function
- adapters can be preset outside of the machine

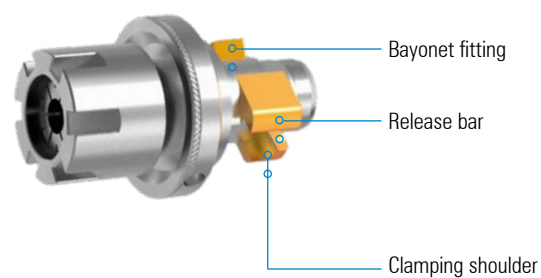
Safety

- securing device via safety bayonet
- self-locking clamping function
- prevention of operating errors
- fulfills machinery directive 2006/42/EG

BENZ NANOFIX® - SYSTEM DESIGN



ADAPTER



SYSTEM OVERVIEW

Technical data		
Size	T* [Nm]	Size Torx Plus wrench
F2	8	T 15

*transmittable torque of the polygon



IC-CAPABLE

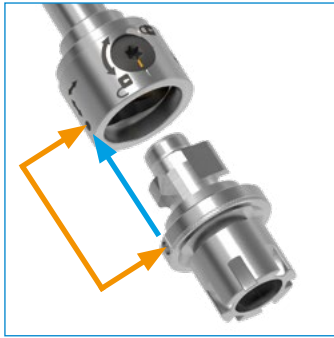


MQL-CAPABLE
ADAPTER ON REQUEST

MODULAR QUICK CHANGE SYSTEM

BENZ NANOFIX®

TOOL CHANGE



Step 1: Familiarize yourself with the symbols

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

Align the marks of the spindle and the adapter. In this position the adapter can be inserted up to the planar surface.



Step 2: Insert the adapter

Insert the adapter with the clamped tool into the output spindle. Rotate it by approx. 70 degrees. 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 Nanofix® can be operated with just one hand without any special tools - a standard torx plus wrench is sufficient. By simply turning the clamping screw 200 degrees (up to the marking of clamping area) the tool adapter (meaning the tool) is clamped.

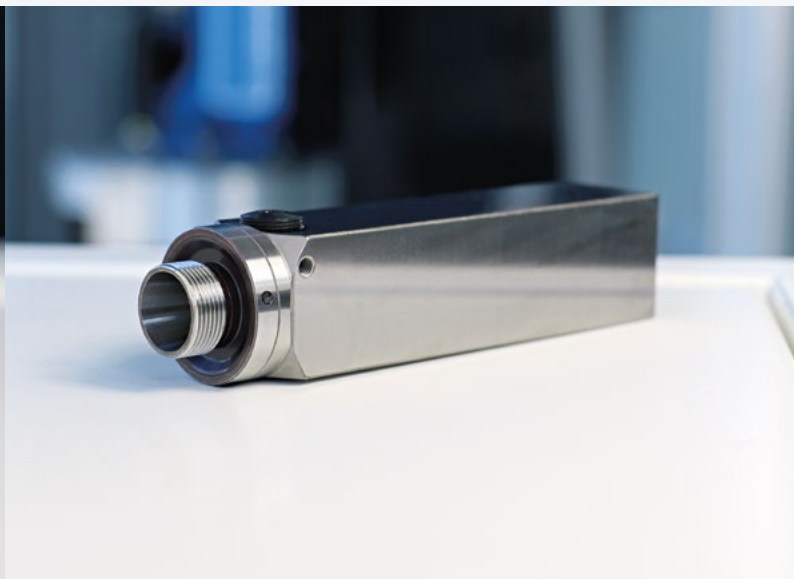


Step 4: Loosen and change the adapter

For loosen the adapter, proceed in reverse order.

After loosening the locking mechanism with a Torx plus wrench and turning the tool adapter approx. 70 degrees (a bayonet style safety mechanism prevents the tool from falling out after opening the lock) the adapter can be removed. The tool change can be done in less than 20 seconds.







BENZ SOLIDFIX[®]

Adapters | Adjustment and Assembly Aid | Reducing sleeves


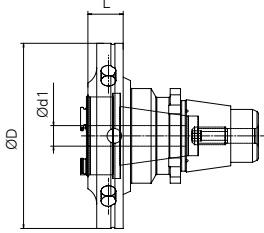
BENZ SOLIDFIX®

	COLLET CHUCK 8° Type ER	20		WELDON for parallel shanks DIN 1835B	20
	WHISTLE-NOTCH for parallel shanks DIN 1835E	21		MILLING ARBOR	22
	COLLET CHUCK with TER-shrinking collet	22		SHRINK FIT CHUCK	24
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	SQUARE SHOULDER / PLUNGE MILL CUTTER	25		TEST MANDREL	25
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	CLOSING PLUG	27			


Further Adapters (such e.g Softsynchro, BENZ Solidfix® static, MQL- capable adapter) upon request.
Please contact our BENZ sales team.

ADAPTER BENZ SOLIDFIX®


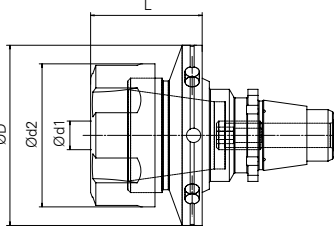
COLLET CHUCK 8° TYPE ER | INTERNAL CLAMPING NUT

Model	Drawing	Technical data					Order No.
		Size	Type	ØD [mm]	Ød1 [mm]	L [mm]	
		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

Collet chuck not included

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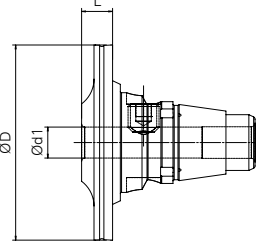
COLLET CHUCK 8° TYPE ER | EXTERNAL CLAMPING NUT

Model	Drawing	Technical data						Order No.
		Size	Type	ØD [mm]	Ød1 [mm]	Ød2 [mm]	L [mm]	
		S1	ER11M	32	1-7	16	20	691.130M120
		S1	ER16M	32	1-10	22	30	691.130M120
		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

Collet chuck not included


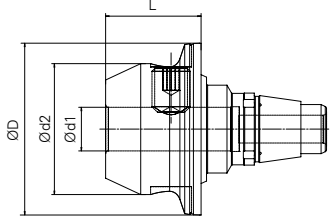
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WELDON FOR PARALLEL SHANKS DIN 1835 B | SHORT DESIGN


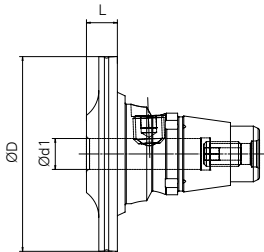
Model	Drawing	Technical data				Order No.
		Size	ØD [mm]	Ød1 [mm]	L [mm]	
		S1	32	3	4	691.1400304
		S1	32	4	5	691.1400405
		S2	40	4	5	692.1400405
		S2	40	6	7	692.1400607
		S3	50	6	6	693.1400606
		S3	50	8	8	694.1400808
		S4	63	6	7	694.1400607
		S4	63	8	8	694.1400808
		S4	63	10	10	694.1401010
		S4	63	12	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

Minimum construction length

WELDON FOR PARALLEL SHANKS DIN 1835 B | STANDARD DESIGN


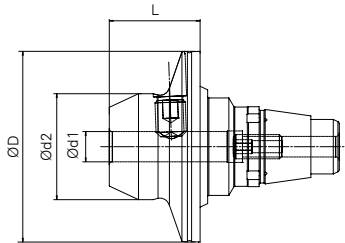
Model	Drawing	Technical data					Order No.
		Size	ØD [mm]	Ød1 [mm]	Ød2 [mm]	L [mm]	
		S1	32	6	25	24	691.1400624
		S2	40	8	28	25	692.1400825
		S3	50	10	35	28	693.1401028
		S3	50	12	42	32	693.1401232
		S3	50	16	48	35	693.1401635
		S4	63	14	48	32	694.1401432
		S4	63	16	48	35	694.1401635
		S4	63	18	50	35	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

WHISTLE NOTCH PARALLEL SHANKS DIN 1835 E | SHORT DESIGN

Model	Drawing	Technical data				Order No.
		Size	ØD [mm]	Ød1 [mm]	L [mm]	
		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

Minimum construction length

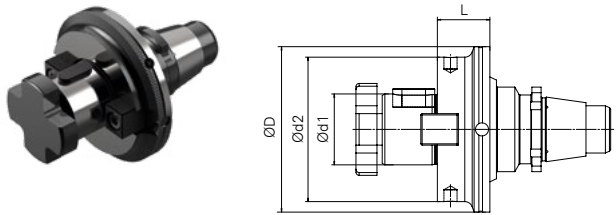
WHISTLE NOTCH PARALLEL SHANKS DIN 1835 E | STANDARD DESIGN

Model	Drawing	Technical data					Order No.
		Size	ØD [mm]	Ød1 [mm]	Ød2 [mm]	L [mm]	
		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

ADAPTER

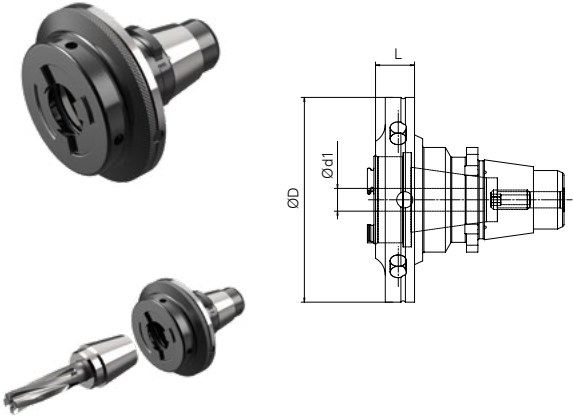
BENZ SOLIDFIX[®]

MILLING ARBOR

Model	Drawing	Technical data					Order No.
		Size	ØD [mm]	Ød1 [mm]	Ød2 [mm]	L [mm]	
		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
		S5	75	32	62	15	695.2313215

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COLLET CHUCK | WITH TER - SHRINKING COLLET


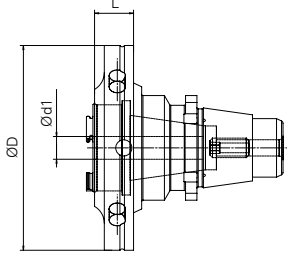
Model	Drawing	Technical data					Order No.
		Size	Type	ØD [mm]	Ød1 [mm]	L [mm]	
		S1	TER 16	32	3	30*	691.1560330
		S1	TER 16	32	3	30*	691.1560430
		S1	TER 16	32	3	30*	691.1560630
		S2	TER 16	40	3	13	692.1560313
		S2	TER 16	40	4	13	692.1560413
		S2	TER 16	40	6	13	692.1560613
		S2	TER 16	40	8	13	692.1560813
		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

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Partner **diebold**
Goldring-Werkzeuge
Spindeltechnologie

MMS-capable adapters on request


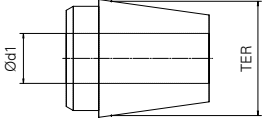
ULTRA-PRECISION COLLET CHUCK | FOR TER - SHRINKING COLLET

Model	Drawing	Technical data					Order No.
		Size	Type	ØD [mm]	Ød1 [mm]	L [mm]	
		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

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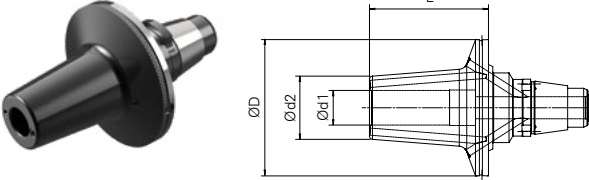
TER-SHRINKING COLLET

Model	Drawing	Technical data			Order No.
		Size	ØD [mm]	Ød1 [mm]	
		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 shrink collet sizes

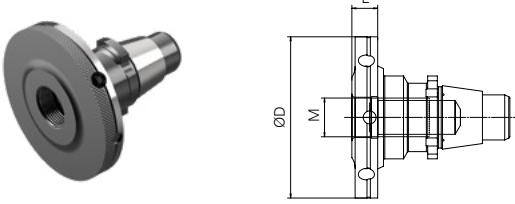
ADAPTER BENZ SOLIDFIX®

SHRINK FIT CHUCK | ONE-PIECE

Model	Drawing	Technical data					Order No.
		Size	ØD [mm]	Ød1 [mm]	Ød2 [mm]	L [mm]	
		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

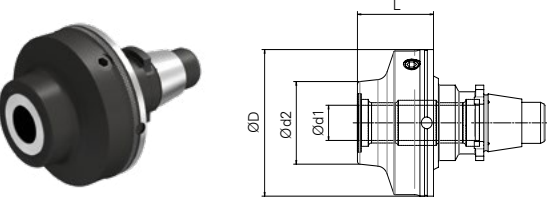
Coolant central or via holes on the collar (without coolant hole on request)
MQL-capable adapter on request

BASE HOLDER FOR THREADED ARBOR | SHORT DESIGN

Model	Drawing	Technical data				Order No.
		Size	ØD [mm]	M [mm]	L [mm]	
		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

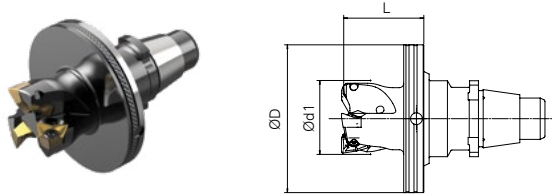
Base holder fits all standard threaded arbors (e.g. Seco, Kennametal...)

HYDRO CLAMPING CHUCK | ONE-PIECE

Model	Drawing	Technical data					Order No.
		Size	ØD [mm]	Ød1 [mm]	Ød2 [mm]	L [mm]	
		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

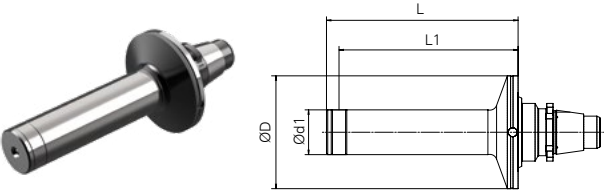
Model	Drawing	Technical data				Order No.
		Size	ØD [mm]	Ød1 [mm]	L [mm]	
		S3	50	25	28	693.6502528S001
		S4	63	32	33	694.6503233S001

Cooperation with



Indexable inserts not included in scope of supply / Can be supplied by Paul Horn GmbH (Type DA32)

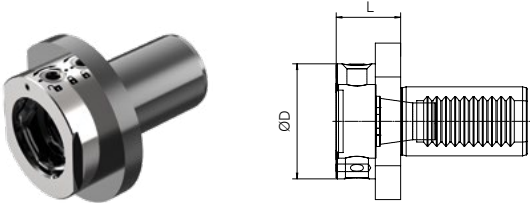
TEST MANDREL

Model	Drawing	Technical data					Order No.
		Size	ØD [mm]	Ød1 [mm]	L [mm]	*L1 [mm]	
		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

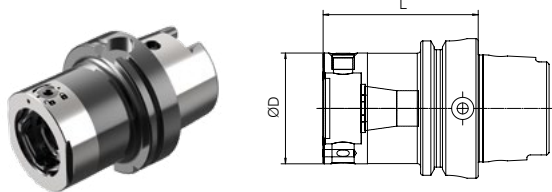
Scope of supply: case with test certificate

*Measuring point

MASTER SHANK / BASE HOLDER | VDI

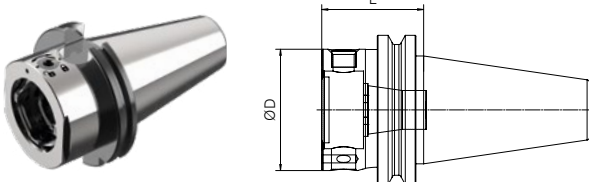
Model	Drawing	Technical data					Order No.
		Size	Type	ØD [mm]	L [mm]	IK	
		S1	VDI 20	32	22		112.251S1022VE
		S2	VDI 25	40	25		325.251S2025VE
		S2	VDI 30	40	25		113.251S2025VE
		S3	VDI 50	30	28		113.251S3028VE
		S3	VDI 30	30	32	✓	113.251S3032R
		S3	VDI 40	40	28		114.251S3028VE
		S3	VDI 40	50	28		114.251S3028VE
		S4	VDI 40	63	32	✓	114.251S4032R
		S5	VDI 50	75	32		115.251S5032VE
		S5	VDI 50	75	40	✓	115.251S5040R

MASTER SHANK | HSK

Model	Drawing	Technical data				
		Size	Type	ØD [mm]	L [mm]	Order No.
		S1	HSK 63	32	55	711.251S1055VE
		S2	HSK 63	40	62	711.251S2062VE
		S3	HSK 63	50	70	711.251S3070VE
		S4	HSK 63	63	75	711.251S4075VE
		S4	HSK 63	63	80	713.251S4080VE
		S5	HSK 100	75	80	711.251S5080VE
		S5	HSK 100	75	90	713.251S5090VE

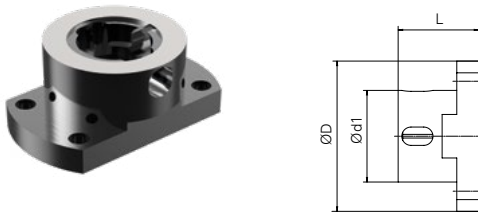
Internal coolant ready (coolant supply transfer needed)

MASTER SHANK | SK

Model	Drawing	Technical data				
		Size	Type	ØD [mm]	L [mm]	Order No.
		S1	SK 30	32	30	090.251S1030VE
		S2	SK 30	40	40	090.251S2040VE
		S3	SK 40	50	42	040.251S3042VE
		S3	SK 50	50	37	042.251S3037VE
		S4	SK 40	63	55	040.251S4055VE
		S4	SK 50	63	40	042.251S4040VE
		S5	SK 40	75	60	040.251S5060VE
		S5	SK 50	75	52	042.251S5052VE

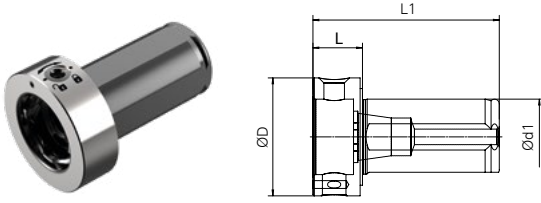
Internal coolant ready (precision pull stud)

MOUNTING BLOCK

Model	Drawing	Technical data			
		Size	ØD [mm]	Ød1 [mm]	L [mm]
		S1	62	31	30
		S2	67	40	38
		S3	82	50	44
		S4	96	65	50
		S5	116	75	60

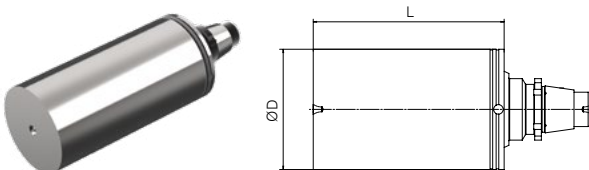
No integrated clamping mechanism

REDUCING SLEEVE

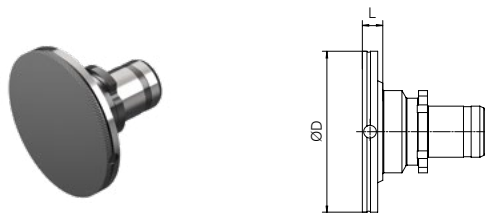
Model	Drawing	Technical data					Order No.
		Size	ØD [mm]	Ød1 [mm]	L [mm]	L1 [mm]	
		S2	40	25	17	65	B570-25S2
		S3	50	32	21	79	B570-32S3
		S4	63	40	22	94	B570-40S4

used for boring bars or combination holders

BLANK

Model	Drawing	Technical data			Order No.
		Size	ØD [mm]	L [mm]	
		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

Model	Drawing	Technical data			Order No.
		Size	ØD [mm]	L [mm]	
		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



BENZ CAPTO™

Adapters

BENZ CAPTO™



COLLET CHUCK
8° Type ER

30



WELDON
for parallel shanks DIN 1835B

30



MILLING ARBOR

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BLANK

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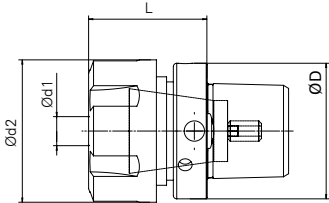
CLOSING PLUG

31

ADAPTER

BENZ CAPTO™


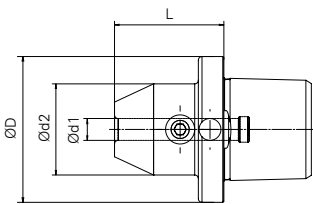
COLLET CHUCK 8° TYPE ER | EXTERNAL CLAMPING NUT

Model	Drawing	Technical data						Order No.
		Size	Type	ØD [mm]	Ød1 [mm]	Ød2 [mm]	L [mm]	
		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	3-26	63	46	553.130E746
		C6	ER40	63	3-26	63	46	553.130E746

without gripper groove ohne Greiferrille


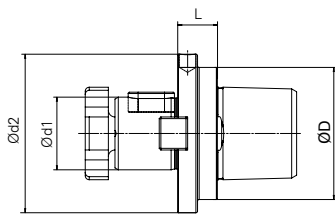
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WELDON FOR PARALLEL SHANKS DIN 1835 B | STANDARD DESIGN

Model	Drawing	Technical data					Order No.
		Size	ØD [mm]	Ød1 [mm]	Ød2 [mm]	L [mm]	
		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	1	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


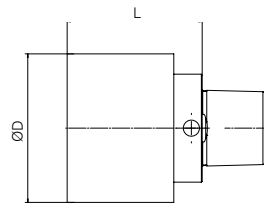
MILLING ARBOR

Model	Drawing	Technical data					Order No.
		Size	ØD [mm]	Ød1 [mm]	Ød2 [mm]	L [mm]	
		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

without gripper groove

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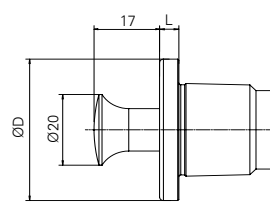
BLANK

Model	Drawing	Technical data			Order No.
		Size	ØD [mm]	L [mm]	
		C3	47	50	550.1024750
		C4	57	63	551.1025763
		C5	72	67	552.1027267
		C6	92	67	553.1029267

without gripper groove

6

CLOSING PLUG

Model	Drawing	Technical data			Order No.
		Size	ØD [mm]	L [mm]	
		C3	32	5	550.581S
		C4	40	5	551.581S
		C5	50	6	552.581S
		C6	63	7	553.581S

made of steel



BENZ NANOFIX®

Adapter

BENZ NANOFIX®



COLLET CHUCK
8° Type ER



WELDON
for parallel shanks DIN 1835B



TEST MANDREL



BLANK

BENZ NANOFIX® - STATISCH



TURNING TOOL



SPECIAL FIXTURE



MASTER SHANK

The BENZ Nanofix®-range currently is only available on request.
Please contact our BENZ sales team.

ACCESSORIES

Collet Chuck | Wrenches | Miscellaneous



COLLET CHUCK



CLAMPING NUT

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SEAL RING

33



COLLET CHUCK

33

WRENCHES



COLLET WRENCH

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INBUS T-WRENCH

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ACCESSORIES



TAPERCLEANER
BENZ Solidfix® / Collet Chuck

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INSERT
KEY BLOCK DIN2097

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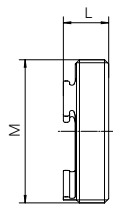
REDUCING SLEEVE
COOLANT NOZZLE

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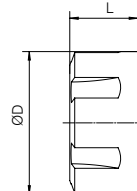
ACCESSORIES

CLAMPING NUT


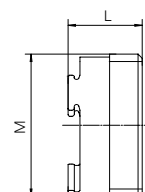
CLAMPING NUT | INTERNAL

Model	Drawing	Technical data			Order No.
		Size Collet chuck	M	L [mm]	
		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


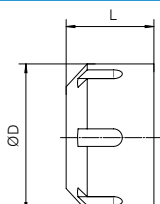
CLAMPING NUT | EXTERNAL - FORM D+E

Model	Drawing	Technical data			Order No.
		Size Collet chuck	ØD [mm]	L [mm]	
		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


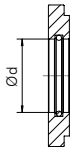
CLAMPING NUT | INTERNAL - SYSTEM REGOFIX

Model	Drawing	Technical data			Order No.
		Size Collet chuck	M	L [mm]	
		ER 16	24x1	12,5	B135-E3AXC
		ER 20	28x1	13,5	B135-E4AXC
		ER 25	32x1,5	13,8	B135-E5AXC
		ER 32	40x1,5	14,9	B135-E6AXC
		ER 40	50x1,5	16,6	B135-E7AXC

CLAMPING | EXTERNAL - SYSTEM REGOFIX FOR TOOLS WITH INTERNAL COOLANT

Model	Drawing	Technical data			Order No.
		Size Collet chuck	ØD [mm]	L [mm]	
		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


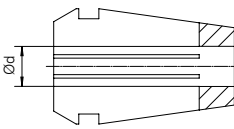
SEAL RING

Model	Drawing	Technical data			Order No.
		Size C.c.	Ød [mm]	Pitch [mm]	
		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-...

Sealing range can be used up to 0.5 mm smaller than nominal dimension d

Example: B137-E3-0600

COLLET CHUCK | FORM B


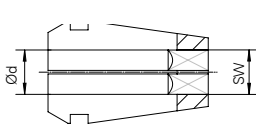
Model	Drawing	Technical data			Order No.
		Size C.c.	Ød [mm]	Pitch [mm]	
		ER 11	1-7	0,5	B134-424E-...
		ER 16	1-10	0,5	B134-426E-...
		ER 20	1-13	1	B134-428E-...
		ER 25	1-16	1	B134-430E-...
		ER 32	3-20	1	B134-470E-...
		ER 40	4-26	1	B134-472E-...

¹ Collet chuck can clamping up to 0,5 mm smaller as nominal range d

² Collet chuck can clamping up to 1 mm smaller as nominal range d


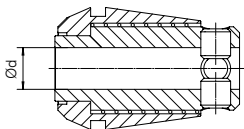
Example: B134-424E-0600

COLLET CHUCK FOR TAP | REGOFIX WITH INTERNAL SQUARE SECTION

Model	Drawing	Technical data			Order No.
		Size C.c.	Ød [mm]	SW [mm]	
		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...

Example: B134-E3-060049

COLLET CHUCK FOR TAP | REGOFIX EXTERNAL SQUARE SECTION WITH LENGTH COMPENSATION


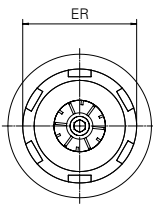
Model	Drawing	Technical data		Order No.
		Size C.c.	Ød [mm]	
		ER 11	1-7	B134-A2...
		ER 16	1-10	B134-A3...
		ER 20	1-13	B134-A4...
		ER 25	1-16	B134-A5...
		ER 32	3-20	B134-A6...
		ER 40	4-26	B134-A7...

Example: B134-A2-0600


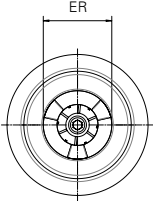
ACCESSORIES

WRENCHES


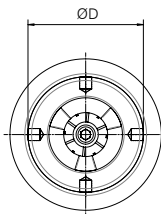
CLAMPING WRENCH | EXTERNAL CLAMPING NUT

Model	Drawing	Technical data	
		Size	Order No.
		Collet chuck	
		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


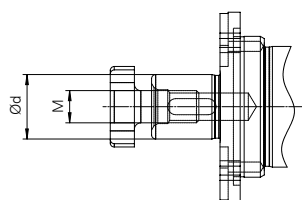
CLAMPING WRENCH | INTERNAL CLAMPING NUT

Model	Drawing	Technical data	
		Size	Order No.
		Collet chuck	
		ER 11	B136-E1AX
		ER 16	B136-E3AX
		ER 20	B136-E4AX
		ER 25	B136-E5AX
		ER 32	B136-E6AX
		ER 40	B136-E7AX


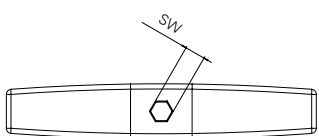
HOOK WRENCH

Model	Drawing	Technical data	
		ØD	Order No.
		Spindle	
		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

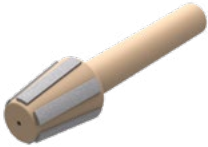
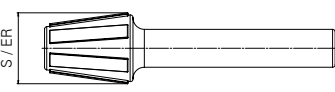
WRENCH DIN 6368 | FOR CROSS RETAINING SCREWS

Model	Drawing	Technical data	
		ØD Milling arbor	M Thread
		16	8
		22	10
		27	12
		32	16
			Order No.
			D06368-080
			D06368-100
			D06368-120
			D06368-160

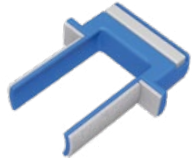
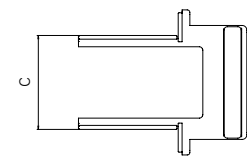
INBUS T-WRENCH | FOR BENZ SOLIDFIX® UND BENZ CAPTO™ ACTUATION

Model	Drawing	Technical data			Order No.
		Size BENZ Solidfix®	Size BENZ CAPTO™	SW	
		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	12	KL8317-45112-SW12


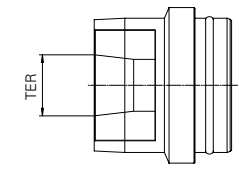
TAPER CLEANER | BENZ SOLIDFIX® / COLLET CHUCK

Model	Drawing	Technical data			Order No.
		Size BENZ Solidfix®	Size Collet chuck		
		S1	ER 11		B069-ER16
		S2	ER 16		B069-ER16
		S3	ER 20		B069-ER20
		S4	ER 25		B069-ER25
		S5	ER 32		B069-ER32

TAPER CLEANER | BENZ CAPTO™

Model	Drawing	Technical data			Order No.
		Size BENZ CAPTO™			
		C3			B069-C3
		C4			B069-C4
		C5			B069-C5
		C6			B069-C6
		C8			B069-C8


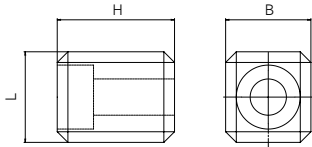
INSERT | FOR SHRINKING ADAPTERS

Model	Drawing	Technical data			Order No.
		Ød1 [mm]	L [mm]		
		S2	Insert TER 16		B136-426E-DSE
		S3	Insert TER 20		B136-428E-DSE
		S4	Insert TER 25		B136-430E-DSE
		S5	Insert TER 32		B136-470E-DSE
		S2 - S5	Base holder with length adjustment		B136-4XXE-DSG

Base holder and respective insert are needed

ACCESSORIES

KEY BLOCK DIN 2097 | FOR MILLING ARBORS

Model	Drawing	Technical data				Order No.
		Ød1 [mm]	L [mm]	B [mm]	H [mm]	
		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

FURTHER ACCESSORIES ON REQUEST

COOLANT NOZZLE



Different variants

REDUCING SLEEVES

VDI













Different sizes and variants

Please contact our [BENZ sales team](#)

PICTOGRAMS & ABBREVIATIONS

OVERVIEW

	OTHER-SPECIFICATION	ABBREVIATIONS
System advantages	<div>  <p>Set-up time</p> </div> <div>  <p>Investment</p> </div> <div>  <p>Easy to handle</p> </div>	M_{max} Maximum torque
	<div>  <p>Safe to handle</p> </div>	i Gear ratio n_{max} Maximum speed
Adapter options	<div>  <p>IC- capable</p> </div> <div>  <p>MQL-capable</p> </div>	p_{max} Maximum pressure (bar) EC External cooling IC Internal cooling
Common information	<div>  <p>Info</p> </div> <div>  <p>Video</p> </div> <div>  <p>Service</p> </div>	$p.$ Page ✓ Possible - Not possible
	<div>  <p>Accessories</p> </div>	SW Width across flats mm Millimeter

PRODUCT GROUPS

TOOLING & MACHINE TOOLING TECHNOLOGY

TOOLING TECHNOLOGY



METAL

LIVE TOOLS/TOOL HOLDERS

- Radial heads 90°
- Radial heads \neq 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.



METAL

EXCHANGEABLE UNITS

- Angle heads 90°
- Angle heads \neq 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.



WOOD / COMPOSITE AND ALUMINIUM

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!

MACHINE TOOLING TECHNOLOGY



METAL

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.



METAL / WOOD / COMPOSITE AND ALUMINIUM

SYSTEM TECHNOLOGY

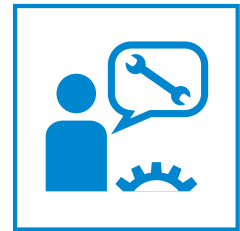
- Multiple-spindle drill heads
- Motor spindles
- Motors
- 5-axis technology
- C-axes
- Swivel axes
- Rotary distributors
- Z-axes

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



METAL / WOOD / COMPOSITE AND ALUMINIUM

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.

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

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