



EXCHANGEABLE UNITS

Tooling technology

Wood / Composites /
Aluminium 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.



PRODUCT COMPASS












UNITS-OVERVIEW BY APPLICATIONS

CLASSIC LINE with grease lubrication

		MONO	MONO R	DUO	QUATTRO	FLEX D	FORTE	ANGULO	SUBIO	MULTI H3	MULTI H3+
											
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DRILLING		●	●	●	●	●	●	●	●	●	●
MILLING		●	●	●	●	●	●	●	●	○	●
SAWING		●	●	●	●	●	●	●	○	○	○
PLANING		○	●	○	○	○	○	○	○	○	○
BRUSHING		●	●	●	●	●	●	●	○	○	○
SANDING		○	○	○	○	○	○	○	○	○	○
POLISHING		○	○	○	○	○	○	○	○	○	○
CUTTING		○	○	○	○	○	○	○	○	○	○
CHISELLING		○	○	○	○	○	○	○	○	○	○

● suitable ● suitable with conditions ○ not suitable

PREMIUM LINE with oil bath lubrication

RENITO V  P. 84	CAVO H  P. 86	CAVO V  P. 88	Tool holder with chip baffle  P. 90	Tool holder  P. 92	MONO R  P. 32	FLEX D  P. 40	FLEX5C/ 5-Motion  P. 42	FLEX5+C / 5-Motion Plus  P. 44	MOULDER C  P. 58	MOULDER  P. 60
○	○	○	○	●	●	●	●	●	○	○
○	○	○	●	●	●	●	●	●	●	●
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INDIVIDUAL SOLUTIONS P. 94

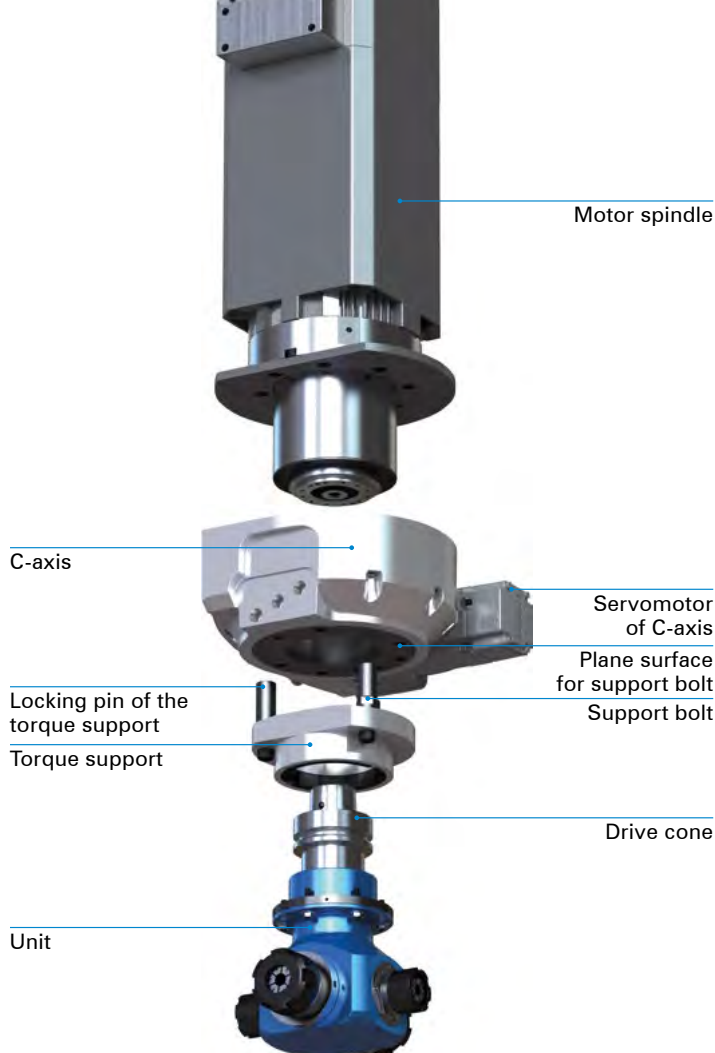
UNITS FOR 5-AXIS MACHINING P. 96

SYSTEM DESIGN MODULAR DESIGN

A „COMPLETE UNIFIED WORK OF ART“

Individual machine elements are like a puzzle. They have to fit together exactly to produce the desired complete picture. If you are using exchangeable units on your machining centre this means the machine connection of a unit must be exactly coordinated to the C-axis and motor spindle. That is the only way the unit will be stably anchored in the machine and protected against twisting during machining.

All the better if you can obtain all your components from a single source. Then they will already fit each other perfectly, straight out of the box. We offer you exchangeable units as well as C-axes, motor spindles and other components.



MACHINE CONNECTION

All machine connections can be implemented



SPECIFICATIONS

The design and length are matched with the respective machining application



OUTPUT SPINDLE

All output spindles can be implemented

Overview p. 106



HSK - F63
HOMAG / WEEKE /
WEINMANN

Design overview p. 107



Medium

Overview p. 108



Centring Ø40 (TK Ø45/Ø52 -
4x M5)/collet chuck holder
ER25 per DIN6499 with inter-
nally located clamping nut

i Individual customer requirements, e.g. machine connections, output spindles, etc. not listed here, can be implemented on request. Please contact us!

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EXCHANGEABLE UNITS

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FUNCTIONS

BENZ units can be used for various types of machining.



DRILLING – A COMBINATION OF DIAMETER AND DRILLING PATTERNS

From the simple dowel drill hole to rows of holes in acoustic boards: There is a wide variety of drilling operations. A different drilling tool is necessary depending on the material hardness and the diameter to be produced. Drilling tools can be used in BENZ standard units such as the DUO double sided angle

head or the QUATTRO four sided angle head. Multi-spindle heads help you save enormous amounts of time. This is because they produce complex drilling patterns in a single machining step.



Dowel drill holes in miter



Drill rows in acoustic boards

MILLING – OPTIMUM LIFTING

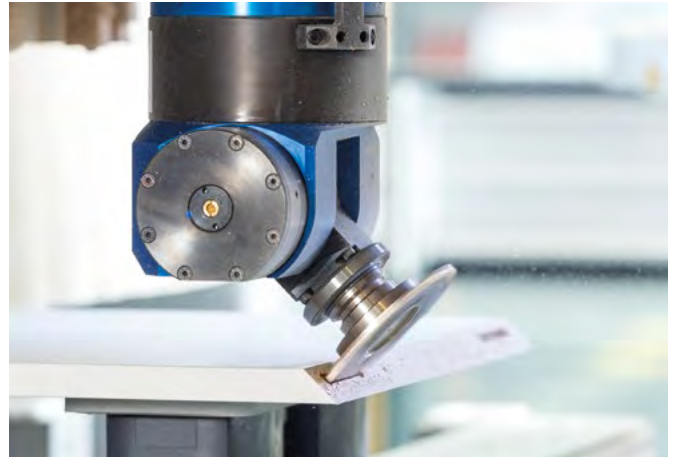
Milling processes are one of the main applications on your CNC machine. A workpiece with a defined shape is produced at the end from various raw materials such as wood, compound material or lightweight metal. The interplay between the milling

tool, machine and unit ensures the desired processing result. BENZ provides units so that the power from the machine can be transferred to the milling tool.

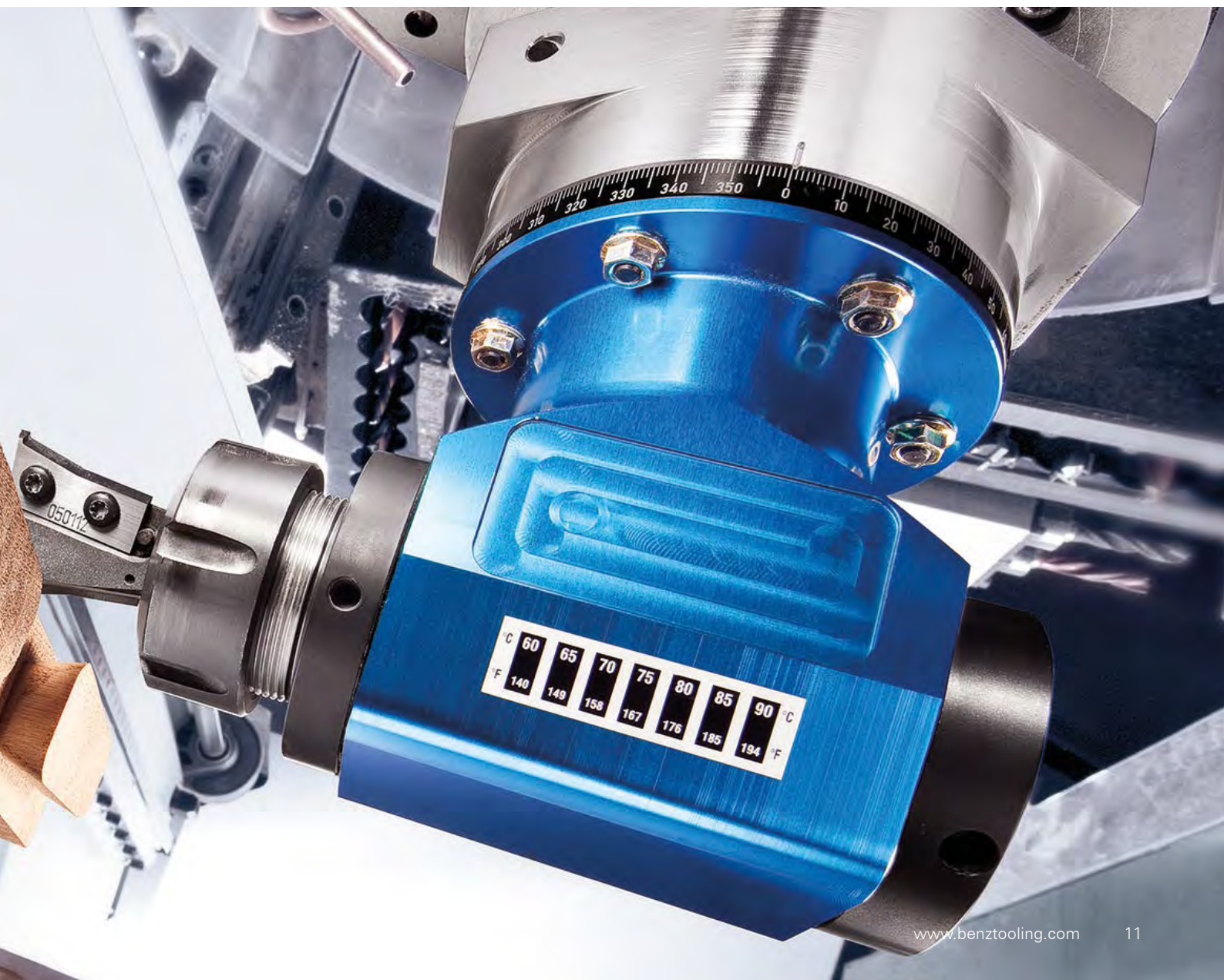


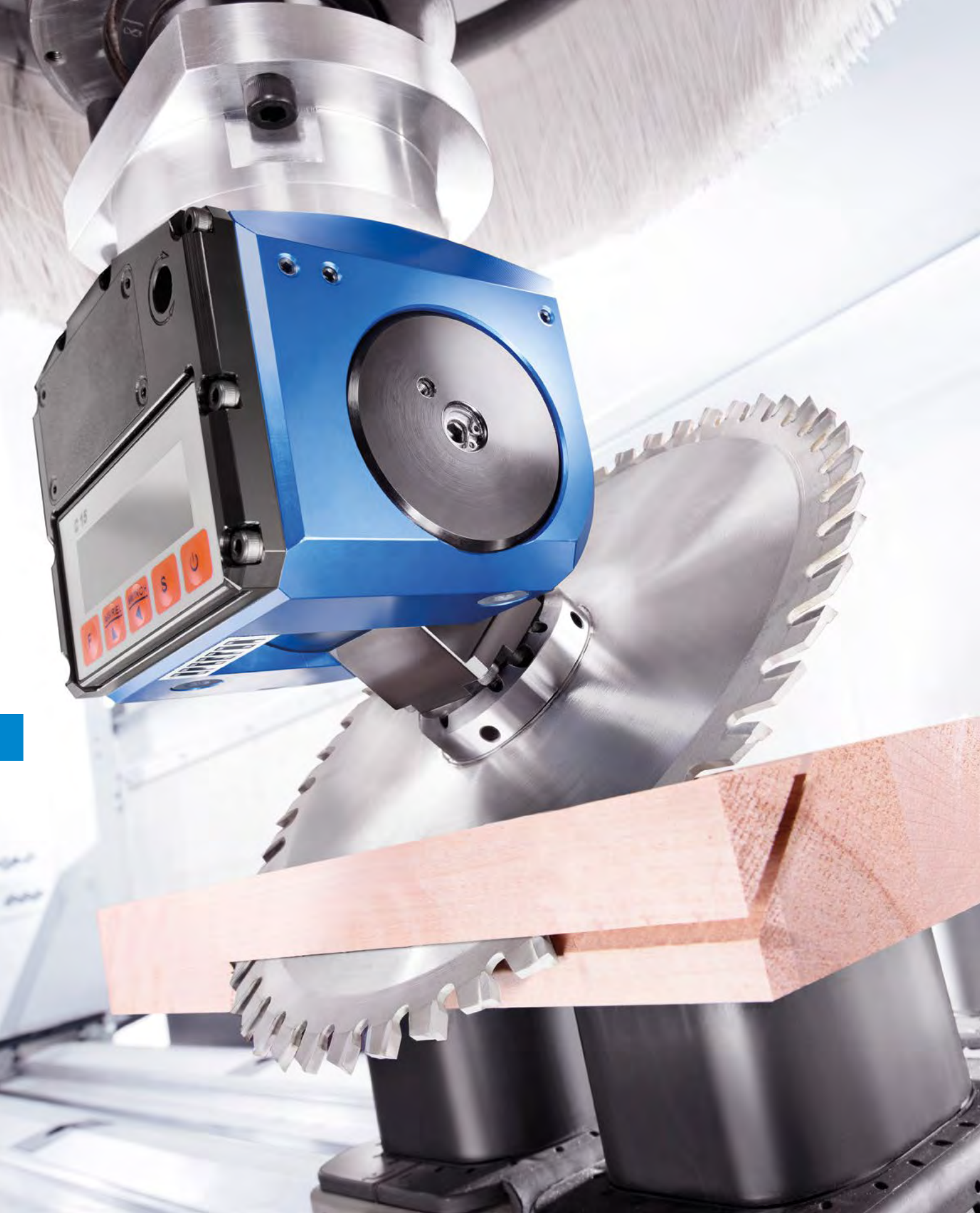


Milling lock cases and faceplates



Using fully automatic and precise slot milling with Flex5+C





Miter sawing

SAWING – PRECISION IN VARIETY

Precise lengthwise, cross or miter cuts, sections, grooves and slots or fast, powerful separation – BENZ offers the suitable solution for each challenge when sawing.

You can use differently sized saw blades, which are always precisely matched to your application at different angles on different units.



Formatting plates



PLANING – LETTING THE CHIPS FALL

It is annoying when you have to reclamp individual workpieces. Why not just produce workpieces entirely in a single set-up? Products can be planed in one clamping process using a moulder head on your CNC machine and can be finished using additional units. Moulder heads are suitable for proces-

sing products made of solid wood, sheet products such as MDF, plastic or similar materials. Not even large cutting volumes can push the unit to its limits.



BRUSHING – SURFACES WITH STRUCTURE

You can visualize the piece of furniture's surface in your mind during the design phase: The solid wood bed with gripping structure or the floor boards in an antique design.

You can create diverse effects and refurbishing outcomes using different brushes and the suitable CNC unit, from the roughest to the finest structure: Individual feel, produced by machine.



Solid wood bed with a brushed surface



Structured workpiece surface



Moulder head with structure brush



Sanding of front surfaces

SANDING – THE PERFECT SANDING PATTERN FOR A CUSTOMIZED FEELING

It's a situation you know. You run your hand over a piece of furniture and appreciate its shape under your fingertips. One surface feels rough, another feels fine and smooth. There's only one thing that can deliver this distinctive feeling: the perfect sanding pattern. BENZ sanding units make sure that your workpiece gets the exactly right surface, for every shape and surface.

Your benefit from machine CNC sanding: no more need for time-consuming clamping for further processing or manual rework. Your production process is streamlined and your production costs are reduced as a result.



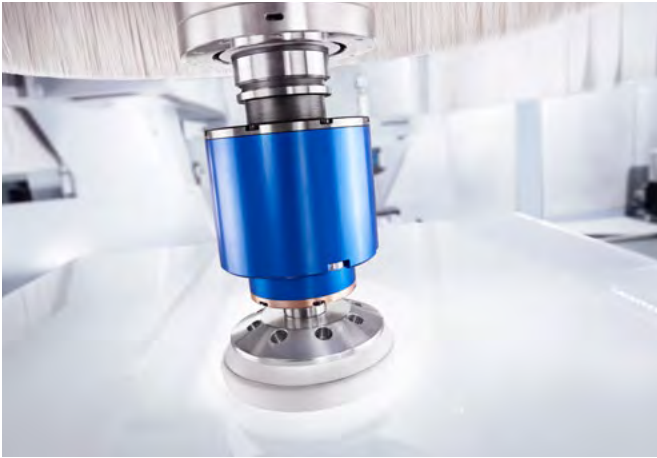
Chamfer sanding on a step

POLISHING – SMOOTH SURFACES, MACHINE MADE

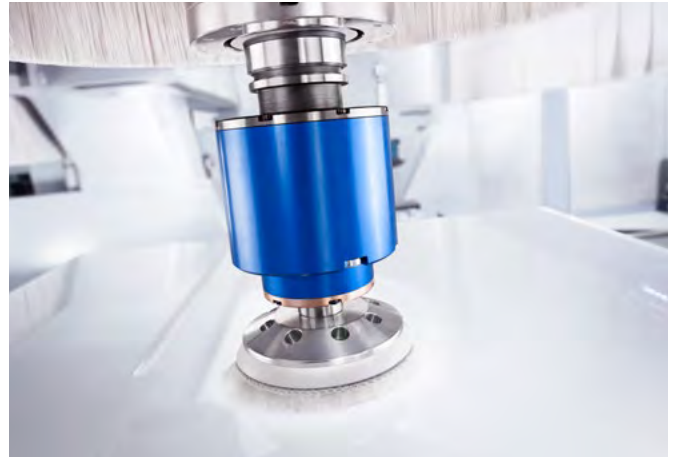
Manual polishing is a thing of the past! BENZ polishing units ensure even, smooth surfaces for your CNC machining center. They guarantee consistently high surface quality – in a fraction of the former production time. These units take on time-consuming tasks that up to now had been done manually. The first unit takes care of the application and

distribution of the polishing agent. A small amount of polishing agent is applied when the unit is positioned on the workpiece. The second unit takes care of polishing. And the best thing: Both holders can be used with commercially available polishing pads, ensuring maximum flexibility for you.





Machine application and distribution of the polishing paste



High-gloss polishing with commercially available polishing pads



CUTTING – MANY DIFFERENT MATERIALS, ONE UNIT

Where wood previously dominated, today you see materials like leather or textiles moving into the production process. Leather-covered seating, foamed-lined instrument cases or lampshades made of pieced-together veneer parts – the list of application examples is long. Despite this new mix of materials,

nothing changes for you in production. Thanks to the BENZ SECO cutting unit, you do not need any special machines. Rather, you are able to cut these materials easily on your CNC machine – and without any splintering.



Cutting carpet



Lampshade - put together out of cutted veneer elements



Cutting PVC



CHISELING — SQUARE. PRACTICAL. PRECISE.

Typical applications for chiseling processes are stake holes on steps for mounting a handrail or inserting fiche hinges in window processing.

Whether hard or soft wood, CNC chiseling units help you achieve precise, square cutouts.



Horizontal insertion of slots for fiche hinges



Stake holes for steps



Vertical insertion of slots for fiche hinges

EXCHANGE- ABLE UNITS

The right unit for every machine and
application.




SINGLE SIDED ANGLE HEAD – CLASSIC LINE MONO



TECHNICAL DATA

Lubrication	Grease
Max. drive speed n_2	15,000rpm
Transmission ratio ($n_1 : n_2$)	1:1.2
Max. drive torque M_2	25 Nm
Weight	about 5 kg

STANDARD DESIGN

- 1  Machine connection
HSK - F63
- 2  Head length
- 3  Output spindle
Centring Ø40/ collet chuck ER25A

MACHINING



Drilling



Milling



Sawing

SPECIFICATIONS



Number of
output spindles



Axis angle



C-angle



Grease lubrication

VIDEO



Angle head - live in the application
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Inquiry form:
www.benztooling.com/en/products

ADDITIONAL OPTIONS: MODULAR DESIGN

1

MACHINE CONNECTION



HSK - F63
BIESSE



SK 30
BIESSE



HSK - F63
Busellato



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



HSK - F63
IMA



HSK - F63
Masterwood



HSK - F63
SCM



HSK - F63
SCM




HSK - F63
Weinig

 For further information see p. 106

2

HEAD LENGTH



 For further information see p. 107

3

OUTPUT SPINDLE



Collet chuck
ER25M



Collet chuck
ER32



Centring Ø40 /
Collet chuck
ER25A



Centring Ø30 /
Weldon Ø10



Arbor Ø30,
tool length
1,5–6 mm



Arbor Ø30,
tool length
1,5–16 mm



Arbor Ø30,
tool length
1,5–33 mm



Arbor Ø30,
tool length
1,5–52 mm



Arbor Ø30,
tool length
1,5–63 mm

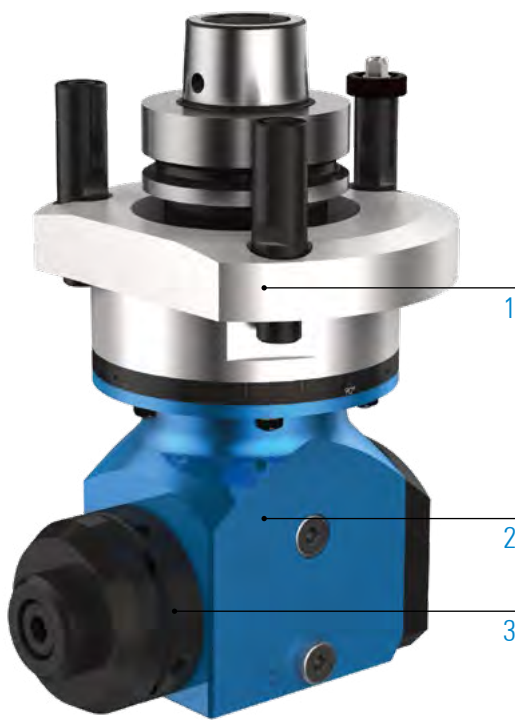


BENZ
Solidfix® S3

 For further information see p. 108

SINGLE SIDED ANGLE HEAD - CLASSIC LINE




MONO R AT REDUCED SPEED



TECHNICAL DATA

Lubrication	Grease
Max. drive speed n_2	8,000rpm
Transmission ratio ($n_1: n_2$)	1:0.8
Max. drive torque M_2	25 Nm
Weight	about 5.5 kg

STANDARD DESIGN

- 1  Machine Connection
HSK - F63
- 2  Head length
- 3  Output spindle
Arbor Ø30, tool length 1,5–6 mm

MACHINING



Drilling



Milling



Sawing

SPECIFICATIONS



Number of
output spindles



Axis angle



C-angle



Grease lubrication

VIDEO



Angle head - live in the application
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ADDITIONAL OPTIONS: MODULAR DESIGN

1



MACHINE CONNECTION



HSK - F63
BIESSE



SK 30
BIESSE



HSK - F63
Busellato



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



HSK - F63
IMA



HSK - F63
Masterwood



HSK - F63
SCM



HSK - F63
SCM



HSK - F63
Weinig

 For further information see p. 106

2



HEAD LENGTH



 For further information see p. 107

3



OUTPUT SPINDLE



Collet chuck
ER25M



Collet chuck
ER32



Centring Ø30 /
Weldon Ø10



Centring Ø40



Arbor Ø30,
tool length
1,5–6 mm



Arbor Ø30,
tool length
1,5–16 mm



Arbor Ø30,
tool length
1,5–33 mm



Arbor Ø30,
tool length
1,5–52 mm



Arbor Ø30,
tool length
1,5–63 mm



BENZ
Solidfix® S3

 For further information see p. 108

SINGLE SIDED ANGLE HEAD - PREMIUM LINE

MONO R AT REDUCED SPEED



TECHNICAL DATA

Lubrication	Oil bath
Max. drive speed n_2	8,000 rpm
Transmission ratio ($n_1 : n_2$)	1:0.8
Max. drive torque M_2	25 Nm
Weight	about 5.5 kg

STANDARD DESIGN

- 1  Machine Connection
HSK - F63
- 2  Head length
- 3  Output spindle
Arbor Ø30, tool length 1,5–6 mm

MACHINING



Drilling



Milling



Sawing

SPECIFICATIONS



Number of
output spindles



Axis angle



C-angle



Oil bath lubrication

VIDEO



Angle head - live in the application
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ADDITIONAL OPTIONS: MODULAR DESIGN

1

MACHINE CONNECTION



HSK - F63
BIESSE



SK 30
BIESSE



HSK - F63
Busellato



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



HSK - F63
IMA



HSK - F63
Masterwood



HSK - F63
SCM



HSK - F63
SCM




HSK - F63
Weinig

 For further information see p. 106

2

HEAD LENGTH



 For further information see p. 107

3

OUTPUT SPINDLE



Collet chuck
ER25M



Collet chuck
ER32



Centring Ø30/
Weldon Ø10



Centring Ø40



Arbor Ø30,
tool length
1,5–6 mm



Arbor Ø30,
tool length
1,5–16 mm



Arbor Ø30,
tool length
1,5–33 mm



Arbor Ø30,
tool length
1,5–52 mm



Arbor Ø30,
tool length
1,5–63 mm



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Solidfix® S3

 For further information see p. 108





DOUBLE SIDED ANGLE HEAD - CLASSIC LINE DUO



TECHNICAL DATA

Lubrication	Grease
Max. drive speed n_2	15,000 rpm
Transmission ratio ($n_1 : n_2$)	1:1.2
Max. drive torque M_2	25 Nm
Weight	about 5 kg

STANDARD DESIGN

- 1  Machine Connection
HSK - F63
- 2  Head length
- 3  Output spindle
Collet chuck ER32
+
 Centring Ø30/Weldon Ø10

MACHINING



Drilling



Milling



Sawing

SPECIFICATIONS



Number of
output spindles



Axis angle



C-angle



Grease lubrication

VIDEO



Angle head - live in the application
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ADDITIONAL OPTIONS: MODULAR DESIGN

1

MACHINE CONNECTION



HSK - F63
BIESSE



SK 30
BIESSE



HSK - F63
Busellato



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



HSK - F63
IMA



HSK - F63
Masterwood



HSK - F63
SCM



HSK - F63
SCM




HSK - F63
Weinig

 For further information see p. 106

2

HEAD LENGTH



 For further information see p. 107

3

OUTPUT SPINDLE



Collet chuck
ER25M



Collet chuck
ER32



Centring Ø40/
Collet chuck
ER25A



Centring Ø30/
Weldon Ø10



Arbor Ø30,
tool length
1,5–6 mm



Arbor Ø30,
tool length
1,5–16 mm



Arbor Ø30,
tool length
1,5–33 mm



Arbor Ø30,
tool length
1,5–52 mm



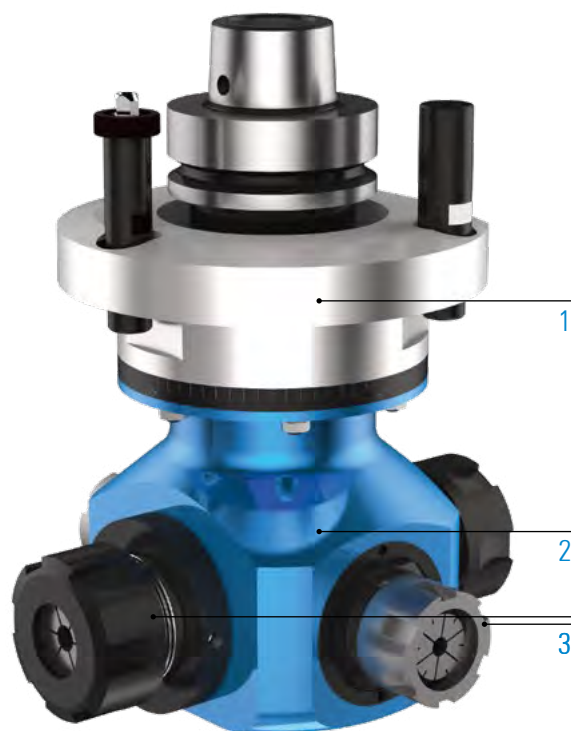
Arbor Ø30,
tool length
1,5–63 mm



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Solidfix® S3

 For further information see p. 108





FOUR SIDED ANGLE HEAD - CLASSIC LINE QUATTRO



TECHNICAL DATA

Lubrication	Grease
Max. drive speed n_2	15,000 rpm
Transmission ratio ($n_1: n_2$)	1:1.2
Max. drive torque M_2 milling spindle	25 Nm
Max. drive torque M_2 drilling spindle	10 Nm
Weight	about 6 kg

STANDARD DESIGN

- 1  Machine Connection
HSK - F63
- 2  Head length
- 3  Output spindle
Collet chuck ER32
+
 Collet chuck ER25M

MACHINING



Drilling



Milling



Sawing

SPECIFICATIONS

Number of
output spindles

Axis angle



C-angle



Grease lubrication

VIDEO



Angle head - live in the application
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ADDITIONAL OPTIONS: MODULAR DESIGN

1

MACHINE CONNECTION



HSK - F63
BIESSE



SK 30
BIESSE



HSK - F63
Busellato



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



HSK - F63
IMA



HSK - F63
Masterwood



HSK - F63
SCM



HSK - F63
SCM



HSK - F63
Weinig

 For further information see p. 106

2

HEAD LENGTH



M

 For further information see p. 107

3

OUTPUT SPINDLE



Collet chuck
ER25M



Collet chuck
ER25M



Collet chuck
ER32



Collet chuck
ER25M



Centring Ø40/
Collet chuck
ER25A



Collet chuck
ER25M



BENZ
Solidfix® S3



Collet chuck
ER25M

 For further information see p. 108

ADJUSTABLE ANGLE HEAD - CLASSIC LINE

FLEX D (MANUALLY ADJUSTABLE)





TECHNICAL DATA


Lubrication	Grease
Max. drive speed n_2	15,000 rpm
Transmission ratio ($n_1 : n_2$)	1:1
Max. drive torque M_2	25 Nm
Weight	about 8 kg

- with digital angle display
- with manual angle adjustment

STANDARD DESIGN

- 

Machine Connection
HSK - F63
- 

Head length
- 

Output spindle
Centring Ø30/Collet chuck ER25M

MACHINING



Drilling



Milling



Sawing

SPECIFICATIONS

Number of
output spindles

Axis angle



C-angle



Grease lubrication

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www.benztooling.com/en/products

ADDITIONAL OPTIONS: MODULAR DESIGN

1

MACHINE CONNECTION



HSK - F63
BIESSE



SK 30
BIESSE



HSK - F63
Busellato



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



HSK - F63
IMA



HSK - F63
Masterwood




HSK - F63
SCM



HSK - F63
SCM




HSK - F63
Weinig

 For further information see p. 106

2

HEAD LENGTH



 For further information see p. 107

3

OUTPUT SPINDLE



Collet chuck
ER25M



Collet chuck
ER32



Centring Ø30 /
Collet chuck
ER25M



Centring Ø30 /
Weldon Ø10

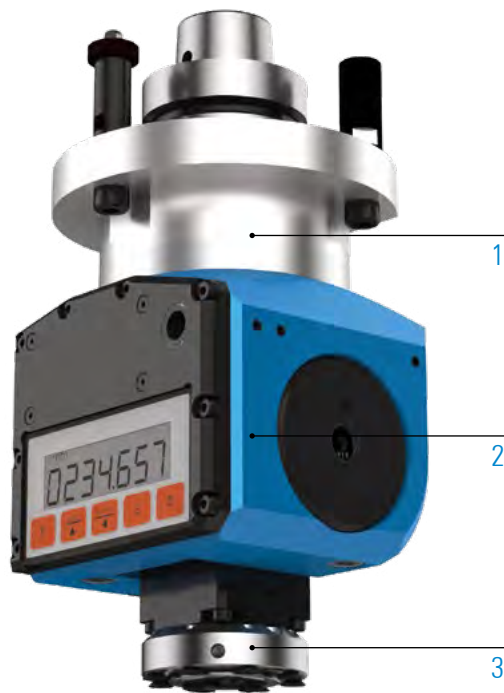


Centring Ø40
Weldon Ø10 / Ø16

 For further information see p. 108

ADJUSTABLE ANGLE HEAD - PREMIUM LINE

FLEX D (MANUALLY ADJUSTABLE)





TECHNICAL DATA


Lubrication	Oil bath
Max. drive speed n_2	15,000 rpm
Transmission ratio ($n_1 : n_2$)	1:0.94
Max. drive torque M_2	26.5 Nm
Weight	about 9 kg

- with digital angle display
- with manual angle adjustment

STANDARD DESIGN

- 

Machine Connection
HSK - F63
- 

Head length
- 

Output spindle
Centring Ø40/Collet chuck ER25A

MACHINING



Drilling



Milling



Sawing

SPECIFICATIONS

Number of
output spindles

Axis angle



C-angle



Oil bath lubrication

VIDEO



Angle head - live in the application
Scan QR code or go to:
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ORDER DIRECTLY



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ADDITIONAL OPTIONS: MODULAR DESIGN

1

MACHINE CONNECTION



HSK - F63
BIESSE



SK 30
BIESSE



HSK - F63
Busellato



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



HSK - F63
IMA



HSK - F63
Masterwood



HSK - F63
SCM



HSK - F63
SCM



HSK - F63
Weinig


 For further information see p. 106

2

HEAD LENGTH



M

 For further information see p. 107

3

OUTPUT SPINDLE



Centring Ø40 /
Collet chuck
ER25A



Centring Ø30 /
Weldon Ø10

 For further information see p. 108

ADJUSTABLE ANGLE HEAD – PREMIUM LINE



FLEX5C/5-MOTION (AUTOMATICALLY ADJUSTABLE)

TECHNICAL DATA

Lubrication	Oil bath
Max. drive speed n_2	15,000 rpm
Transmission ratio ($n_1 : n_2$)	1:0.94
Max. drive torque M_2	26.5 Nm
Weight	about 13 kg

– With automatic angle adjustment over C-axis

STANDARD DESIGN

- 1  Machine connection
HSK - F63
- 2  Output spindle
Centring Ø40/Collet chuck ER25A



MACHINING



Drilling



Milling



Sawing

SPECIFICATIONS



Number of
output spindles



Axis angle



Oil bath lubrication

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ADDITIONAL OPTIONS: MODULAR DESIGN

1

MACHINE CONNECTION



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN


 For further information see p. 106

2

OUTPUT SPINDLE



Centring Ø 40 /
Collet chuck
ER25A

 For further information see p. 108

ADJUSTABLE ANGLE HEAD – PREMIUM LINE

FLEX5+C/5-MOTION PLUS (AUTOMATICALLY ADJUSTABLE)



TECHNICAL DATA

Lubrication	Oil bath
Max. drive speed n_2	15,000rpm
Transmission ratio ($n_1 : n_2$)	1:0.94
Max. drive torque M_2	10Nm
Weight	about 13kg

- With automatic angle adjustment over C-axis
- With automatic tool change

STANDARD DESIGN

- 

Machine connection
HSK - F63
- 

Output spindle
WFC 40-25

MACHINING



Drilling



Milling



Sawing

SPECIFICATIONS



Number of
output spindles



Axis angle



Oil bath lubrication

VIDEO



FLEX5+C – live in the application
Scan QR code or go to:
www.youtube.com/BENZWerkzeugsysteme

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Inquiry form:
www.benztooling.com/en/products

ADDITIONAL OPTIONS: MODULAR DESIGN

1

MACHINE CONNECTION



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



For further information see p.106

2

OUTPUT SPINDLE

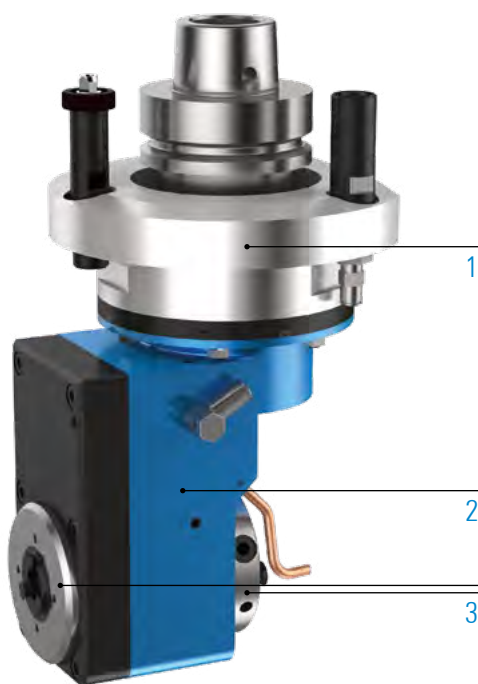


WFC 40-25



For further information see p.108


LOCK RECESS TRIMMING UNIT - CLASSIC LINE FORTE





TECHNICAL DATA

Lubrication	Grease
Max. drive speed n_2	15,000 rpm
Transmission ratio ($n_1 : n_2$)	1:1.2
Max. drive torque M_2	25 Nm
Weight	about 5.5 kg

STANDARD DESIGN


- 

Machine Connection
HSK - F63
- 

Head length
- 

Output spindle
Centring Ø30/Whistle Notch Ø16/Ø20

+



Collet chuck ER16A

MACHINING



Drilling



Milling



Sawing

SPECIFICATIONS



Number of
output spindles



Axis angle



C-angle



Grease lubrication

VIDEO



Angle head - live in the application
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www.youtube.com/BENZWerkzeugsysteme

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Inquiry form:
www.benztooling.com/en/products

ADDITIONAL OPTIONS: MODULAR DESIGN

1

MACHINE CONNECTION



HSK - F63
BIESSE



SK 30
BIESSE



HSK - F63
Busellato



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



HSK - F63
IMA



HSK - F63
Masterwood



HSK - F63
SCM



HSK - F63
SCM



HSK - F63
Weinig


 For further information see p. 106

2

HEAD LENGTH



M

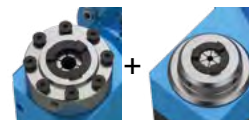
 For further information see p. 107

3

OUTPUT SPINDLE



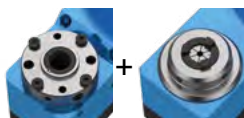
Collet chuck
ER32 Collet chuck
ER16A



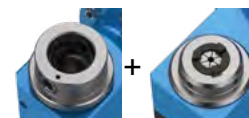
Centring Ø40 /
Collet chuck
ER25A Collet chuck
ER16A



Collet chuck
ER25M Collet chuck
ER16A



Centring Ø30 /
Whistle Notch
Ø16 / Ø20 Collet chuck
ER16A



BENZ
Solidfix® S3 Collet chuck
ER16A

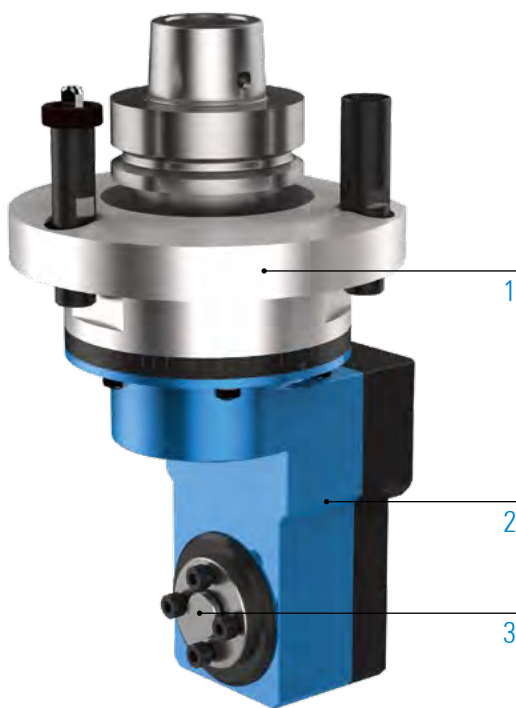


Arbor Ø20,
tool length
6 – 43 mm

 For further information see p. 108

CORNER NOTCHING UNIT - CLASSIC LINE




ANGULO



TECHNICAL DATA

Lubrication	Grease
Max. drive speed n_2	10,000 rpm
Transmission ratio ($n_1 : n_2$)	1:1.3
Max. drive torque M_2	20 Nm
Weight	about 4.5 kg

STANDARD DESIGN

- 1  Machine Connection
HSK - F63
- 2  Head length
- 3  Output spindle
Centring Ø16

MACHINING



Drilling



Milling

SPECIFICATIONS



Number of
output spindles



Axis angle



C-angle



Grease lubrication

VIDEO



Angle head - live in the application
Scan QR code or go to:
www.youtube.com/BENZWerkzeugsysteme

ORDER DIRECTLY



Inquiry form:
www.benztooling.com/en/products

ADDITIONAL OPTIONS: MODULAR DESIGN

1

MACHINE CONNECTION



HSK - F63
BIESSE



SK 30
BIESSE



HSK - F63
Busellato



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



HSK - F63
IMA



HSK - F63
Masterwood




HSK - F63
SCM



HSK - F63
SCM




HSK - F63
Weinig

 For further information see p. 106

2

HEAD LENGTH



 For further information see p. 107

3

OUTPUT SPINDLE



Collet chuck
ER16A



Collet chuck
ER25M



Centring Ø16

 For further information see p. 108

UNDERSURFACE UNIT - CLASSIC LINE

SUBIO



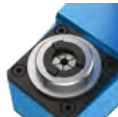
TECHNICAL DATA

Lubrication
 Max. drive speed n_2
 Transmission ratio ($n_1 : n_2$)
 Max. drive torque M_2
 Weight

Grease
 10,000rpm
 1:1
 8Nm
 about 7 kg



STANDARD DESIGN

- 1  Machine Connection
HSK - F63
- 2  Head size
- 3  Output spindle
Collet chuck
ER25A

MACHINING



Drilling



Milling

SPECIFICATIONS



Number of
output spindles



Axis angle



C-angle



Grease lubrication

ORDER DIRECTLY



Inquiry form:
www.benztooling.com/en/products

ADDITIONAL OPTIONS: MODULAR DESIGN

1

MACHINE CONNECTION



HSK - F63
BIESSE



SK 30
BIESSE



HSK - F63
Busellato



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



HSK - F63
IMA



HSK - F63
Masterwood



HSK - F63
SCM



HSK - F63
SCM




HSK - F63
Weinig

 For further information see p. 106

2

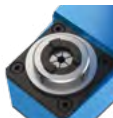
HEAD SIZE



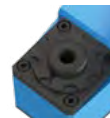
 Additional projections and lengths on request

3

OUTPUT SPINDLE



Collet chuck
ER25A



Weldon Ø12

 For further information see p. 108

MULTI-SPINDLE HEAD - CLASSIC LINE

MULTI H3



TECHNICAL DATA

Lubrication	Grease
Max. drive speed n_2	12,000rpm
Transmission ratio ($n_1: n_2$)	1:4
Max. drive torque M_2	2Nm
Weight	about 4kg

– Design suitable for nesting applications

STANDARD DESIGN

- 1  Machine Connection
HSK - F63
- 2  Spindle distance
32
-  Output spindle
Whistle Notch Ø6

MACHINING



Drilling

SPECIFICATIONS



Number of
output spindles



Axis angle



C-angle



Grease lubrication

VIDEO



Multi-spindle head - live in the
application
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www.youtube.com/BENZWerkzeugsysteme

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Inquiry form:
www.benztooling.com/en/products

ADDITIONAL OPTIONS: MODULAR DESIGN

1

MACHINE CONNECTION



HSK - F63
BIESSE



SK 30
BIESSE



HSK - F63
Busellato



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



HSK - F63
IMA



HSK - F63
Masterwood




HSK - F63
SCM



HSK - F63
SCM



HSK - F63
Weinig

 For further information see p. 106

2

SPINDLE DISTANCE

20

32




 Additional spindle distances/ numbers of spindles/ drilling patterns on request

OUTPUT SPINDLE



Whistle Notch
Ø6

 For further information see p. 108

MULTI-SPINDLE HEAD - CLASSIC LINE

MULTI H3+

TECHNICAL DATA

Lubrication	Grease
Max. drive speed n_2	10,000rpm
Transmission ratio ($n_1: n_2$)	1:1.37
Max. drive torque M_2	5 Nm
Weight	about 4kg



STANDARD DESIGN

- 1  Machine Connection
HSK - F63
- 2  Spindle distance
25
-  Output spindle
Weldon Ø10

MACHINING



Drilling



Milling

SPECIFICATIONS



Number of
output spindle



Axis angle



C-angle



Grease lubrication

VIDEO



Multi-spindle head - live in the
application
Scan QR code or go to:
www.youtube.com/BENZWerkzeugsysteme

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www.benztooling.com/en/products

ADDITIONAL OPTIONS: MODULAR DESIGN

1

MACHINE CONNECTION



HSK - F63
BIESSE



SK 30
BIESSE



HSK - F63
Busellato



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



HSK - F63
IMA



HSK - F63
Masterwood




HSK - F63
SCM



HSK - F63
SCM



HSK - F63
Weinig

 For further information see p. 106

2

SPINDLE DISTANCE



20

22

22,5

25


32

 Additional spindle distances/ numbers of spindles/ drilling patterns on request

OUTPUT SPINDLE



Weldon Ø10

 For further information see p. 108

MULTI-SPINDLE HEAD - CLASSIC LINE

MULTI V

TECHNICAL DATA

Lubrication	Grease
Max. drive speed n_2	12,000 rpm
Transmission ratio ($n_1 : n_2$)	1:1
Max. drive torque M_2	5 Nm
Weight	about 5.5 kg

STANDARD DESIGN

- 1  Machine Connection
HSK - F63
- 2  5 Number of spindles
-  32 Spindle distance
-  Output spindle
Weldon Ø10

MACHINING



Drilling



Milling

SPECIFICATIONS



Number of
output spindles



Axis angle



C-angle



Grease lubrication

VIDEO



Multi-spindle head - live in the
application
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Inquiry form:
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ADDITIONAL OPTIONS: MODULAR DESIGN

1

MACHINE CONNECTION



HSK - F63
BIESSE



SK 30
BIESSE



HSK - F63
Busellato



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



HSK - F63
IMA



HSK - F63
Masterwood



HSK - F63
SCM



HSK - F63
SCM



HSK - F63
Weinig

 For further information see p.106

2

NUMBER OF SPINDLES



3

5

7

9

11

13

SPINDLE DISTANCE

20

21,5

25

25,4

30

32

40


50

60

64

75

100

 Additional spindle distances/ numbers of spindles/ drilling patterns on request.

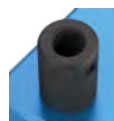
OUTPUT SPINDLE



Collet chuck
ER25M



Collet chuck
ER32



Weldon Ø10

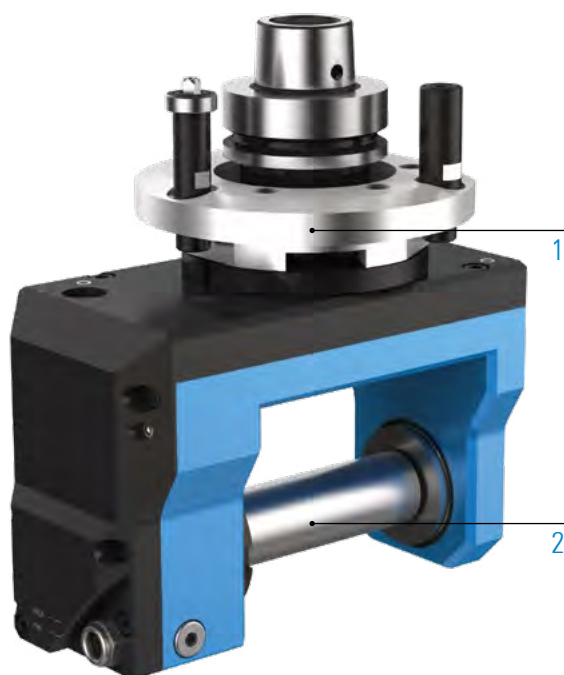
 For further information see p. 108

MOULDER HEAD - PREMIUM LINE



MOULDER C

TECHNICAL DATA

Lubrication	Oil bath
Max. drive speed n_2	10,000 rpm
Transmission ratio ($n_1 : n_2$)	1:0.9
Max. drive torque M_2	25 Nm
Weight	about 7.5 kg
Max. tool diameter	Ø125



STANDARD DESIGN

- 1  Machine connection
HSK - F63
- 2  Output spindle
Arbor Ø30, tool length 100 mm

MACHINING



Milling



Sawing



Planing



Brushing

SPECIFICATIONS



Number of
output spindles



Axis angle



C-angle



Oil bath lubrication

VIDEO



Unit - live in the application
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www.benztooling.com/en/products

ADDITIONAL OPTIONS: MODULAR DESIGN

1

MACHINE CONNECTION



HSK - F63
BIESSE



SK 30
BIESSE



HSK - F63
Busellato



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



HSK - F63
IMA



HSK - F63
Masterwood



HSK - F63
SCM



HSK - F63
SCM



HSK - F63
Weinig



For further information see p. 106

2

OUTPUT SPINDLE



Arbor Ø30,
tool length
100 mm



Arbor Ø30,
tool length
120 mm

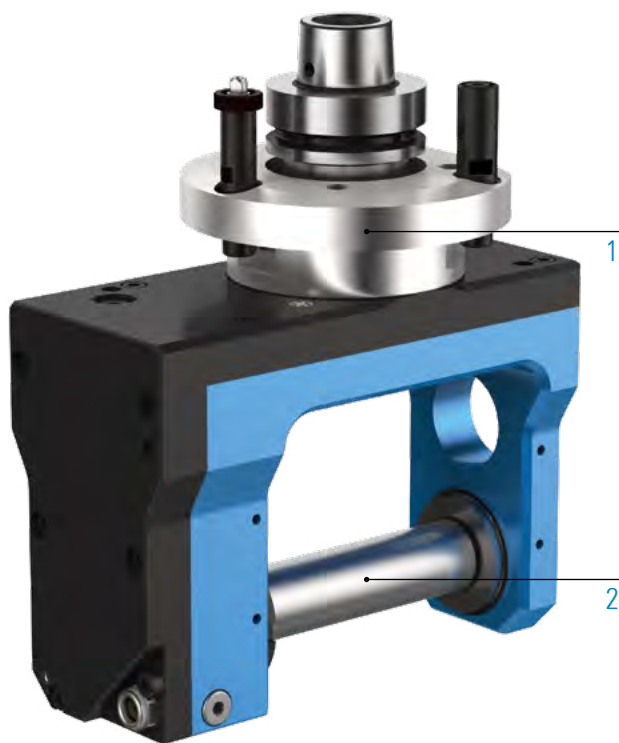


Additional arbor diameters and tool lengths on request

MOULDER HEAD - PREMIUM LINE

MOULDER

TECHNICAL DATA



Lubrication
 Max. drive speed n_2
 Transmission ratio ($n_1 : n_2$)
 Max. drive torque M_2
 Weight
 Max. tool diameter

Oil bath
 10,000 rpm
 1:0.7
 25 Nm
 about 10 kg
 Ø180

STANDARD DESIGN



Machine Connection
 HSK - F63



Output spindle
 Arbor Ø30, tool length 120 mm

MACHINING



Milling



Sawing



Planing



Brushing

SPECIFICATIONS



Number of
 output spindle



Axis angle



C-angle



Oil bath lubrication

VIDEO



Unit - live in the application
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ADDITIONAL OPTIONS: MODULAR DESIGN

1

MACHINE CONNECTION



HSK - F63
BIESSE



SK 30
BIESSE



HSK - F63
Busellato



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



HSK - F63
IMA



HSK - F63
Masterwood



HSK - F63
SCM



HSK - F63
SCM



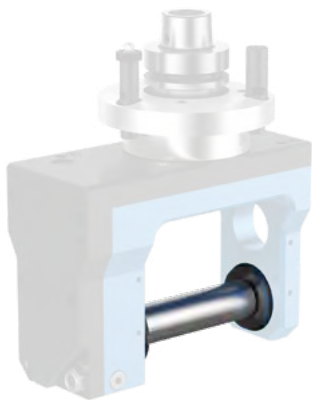
HSK - F63
Weinig



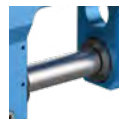
For further information see p. 106

2

OUTPUT SPINDLE



Arbor Ø30,
tool length
120 mm



Arbor Ø35,
tool length
120 mm



Arbor Ø30,
tool length
170 mm



Arbor Ø35,
tool length
170 mm



Additional arbor diameters and tool lengths on request

FLOATING TRIMMING UNIT– CLASSIC LINE



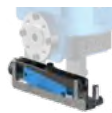
FLOATING HS

TECHNICAL DATA

Lubrication	Grease
Max. drive speed n_2	15,000rpm
Transmission ratio ($n_1: n_2$)	1:1.2
Max. drive torque M_2	25 Nm
Weight	ca. 8,5 kg

STANDARD DESIGN



- 1  Machine connection
HSK - F63
- 2  Output spindle
Centring Ø 30/Weldon Ø 10
- 3  Material tracing element
Steel

MACHINING



Milling



Sawing

SPECIFICATIONS



Number of
output spindles



Axis angle



C-angle



Grease lubrication

ORDER DIRECTLY



Inquiry form:
www.benztooling.com/en/products

ADDITIONAL OPTIONS: MODULAR DESIGN

1

MACHINE CONNECTION



HSK - F63
BIESSE



SK 30
BIESSE



HSK - F63
Busellato



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



HSK - F63
IMA



HSK - F63
Masterwood



HSK - F63
SCM



HSK - F63
SCM



HSK - F63
Weinig

 For further information see p. 106

2

OUTPUT SPINDLE



Centring Ø40/
collet chuck
ER25A



Centring Ø30/
Weldon Ø10

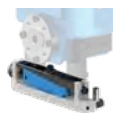


Arbor Ø30,
tool length
1.5 - 6 mm

 For further information see p. 108

3

MATERIAL TRACING ELEMENT



Plastic

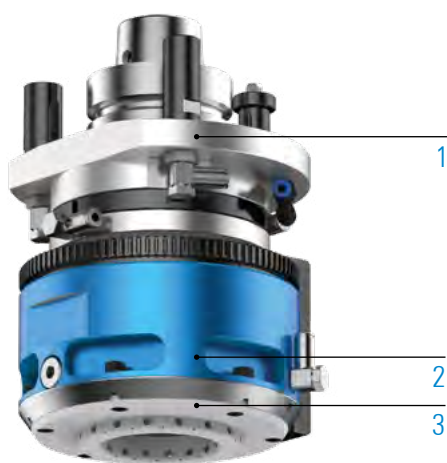


Steel

FLOATING TRIMMING UNIT – CLASSIC LINE

FLOATING V C

TECHNICAL DATA



Lubrication	Grease
Max. drive speed n_2	24,000 rpm
Transmission ratio ($n_1 : n_2$)	1:1
Max. drive torque M_2	8 Nm
Weight	about 4.5 kg

STANDARD DESIGN

- 1  Machine connection
HSK - F63
- 2  Output spindle
Weldon Ø10/Ø16
- 3  Internal diameter of floating ring
50

MACHINING



Drilling



Milling

SPECIFICATIONS



Number of
output spindles



Axis angle



C-angle



Grease lubrication

ORDER DIRECTLY



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www.benztooling.com/en/products

ADDITIONAL OPTIONS: MODULAR DESIGN

1

MACHINE CONNECTION



HSK - F63
BIESSE



SK 30
BIESSE



HSK - F63
Busellato



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



HSK - F63
IMA



HSK - F63
Masterwood



HSK - F63
SCM



HSK - F63
SCM



HSK - F63
Weinig



For further information see p. 106

2

OUTPUT SPINDLE



Weldon
Ø 10/Ø 16



For further information see p. 108

3

INTERNAL DIAMETER OF FLOATING RING



50



Additional internal diameters of floating ring on request

FLOATING TRIMMING UNIT – CLASSIC LINE FLOATING V



TECHNICAL DATA

Lubrication	Grease
Max. drive speed n_2	18,000 rpm
Transmission ratio ($n_1 : n_2$)	1:1
Max. drive torque M_2	10 Nm
Weight	about 6 kg

STANDARD DESIGN

- 1  Machine connection
HSK - F63
- 2  Output spindle
BENZ Solidfix® S3
- 3  Internal diameter of floating
ring

MACHINING



Drilling



Milling

SPECIFICATIONS



Number of
output spindles



Axis angle



Grease lubrication

VIDEO



Unit - live in the application
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www.benztooling.com/en/products

ADDITIONAL OPTIONS: MODULAR DESIGN

1



MACHINE CONNECTION



HSK - F63
BIESSE



SK 30
BIESSE



HSK - F63
Busellato



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



HSK - F63
IMA



HSK - F63
Masterwood



HSK - F63
SCM



HSK - F63
SCM



HSK - F63
Weinig

 For further information see p. 106

2



OUTPUT SPINDLE



BENZ
Solidfix® S3

 For further information see p. 108

3



INTERNAL DIAMETER OF FLOATING RING

70

94

105

122

135

 Additional internal diameters of floating ring on request

TRIMMING UNIT – CLASSIC LINE

LIVELLO



TECHNICAL DATA

Lubrication	Grease
Max. drive speed n_2	12,000rpm
Transmission ratio ($n_1 : n_2$)	1:1
Max. drive torque M_2	5 Nm
Max. edge radius	R12
Max. workpiece thickness	60 mm
Weight	about 11 kg

STANDARD DESIGN

- 

Machine connection
HSK - F63
- 

Output spindle
Centring Ø19

MACHINING



Milling



Sanding

SPECIFICATIONS



Number of
output spindles



Axis angle



C-angle



Grease lubrication

VIDEO



Unit - live in the application
Scan QR code or go to:
www.youtube.com/BENZWerkzeugsysteme

ORDER DIRECTLY



Inquiry form:
www.benztooling.com/en/products

ADDITIONAL OPTIONS: MODULAR DESIGN

1

MACHINE CONNECTION



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



HSK - F63
IMA



HSK - F63
SCM



HSK - F63
Weinig



For further information see p. 106

2

OUTPUT SPINDLE



Centring Ø 19



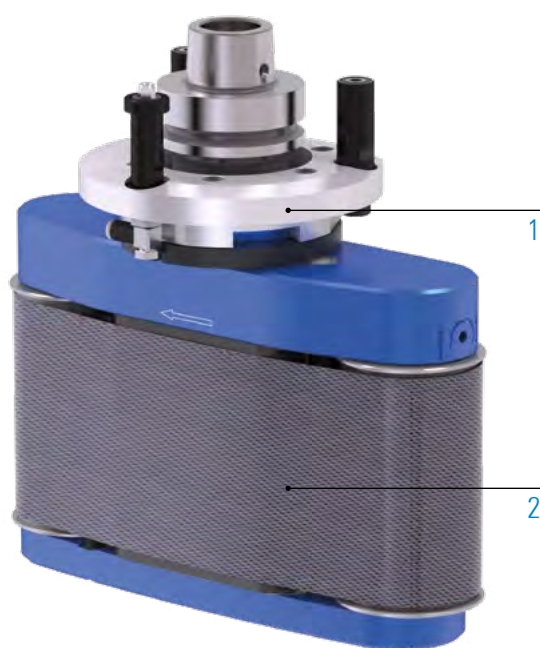
For further information see p. 108

BELT SANDING UNIT - CLASSIC LINE

COLLEVO+

TECHNICAL DATA

Lubrication	Grease
Max. drive speed n_2	2,700rpm
Transmission ratio ($n_1 : n_2$)	1:0.9
Weight	about 9kg



STANDARD DESIGN

- 1  Machine Connection
HSK - F63
- 2  Sanding belt
Width 100 mm, length 560 mm

MACHINING



Sanding

SPECIFICATIONS

Number of
output spindles

Axis angle



C-angle



Grease lubrication

VIDEO



Unit - live in the application
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www.youtube.com/BENZWerkzeugsysteme

ORDER DIRECTLY



Inquiry form:
www.benztooling.com/en/products

ADDITIONAL OPTIONS: MODULAR DESIGN

1



MACHINE CONNECTION



HSK - F63
BIESSE



SK 30
BIESSE



HSK - F63
Busellato



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



HSK - F63
IMA



HSK - F63
Masterwood



HSK - F63
SCM



HSK - F63
SCM



HSK - F63
Weinig



For further information see p. 106

2



SANDING BELT



Width 100 mm,
length 560 mm

ORBITAL SANDING UNIT - CLASSIC LINE




SIMOLO

TECHNICAL DATA

Lubrication	Grease
Max. drive speed n_2	4,000 min ⁻¹
Transmission ratio ($n_1 : n_2$)	1:1
Weight	about 3 kg



STANDARD DESIGN

- 1  Machine Connection
HSK - F63
- 2  Hardness level of sanding disc
-  125 Diameter of sanding disc

MACHINING



Sanding

SPECIFICATIONS

Number of
output spindles

Axis angle



Grease lubrication

VIDEO



Unit - live in the application
Scan QR code or go to:
www.youtube.com/BENZWerkzeugsysteme

ORDER DIRECTLY



Inquiry form:
www.benztooling.com/en/products

ADDITIONAL OPTIONS: MODULAR DESIGN

1



MACHINE CONNECTION



HSK - F63



HSK - E63



SK 30

 For further information see p. 106

2



HARDNESS LEVEL OF SANDING DISC

SO

ME


HA

DIAMETER OF SANDING DISC

50

125

150

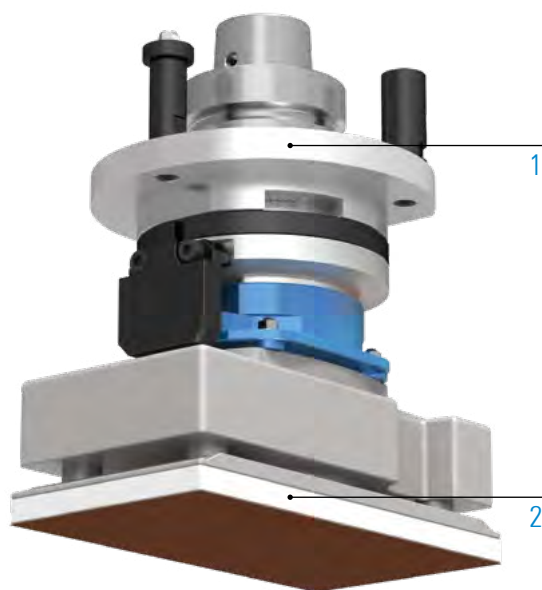
 Additional diameters of sanding disc on request

VIBRATING SANDING UNIT – CLASSIC LINE



ZUCCO

TECHNICAL DATA

Lubrication	Grease
Max. drive speed n_2	3,000 rpm
Transmission ratio ($n_1 : n_2$)	1:1
Weight	about 3 kg



STANDARD DESIGN

- 1  Machine connection
HSK - F63
- 2  Sanding plate
Width 93 mm, Length 175 mm

MACHINING



Sanding

SPECIFICATIONS

Number of
output spindles

Axis angle



C-angle



Grease lubrication

ORDER DIRECTLY

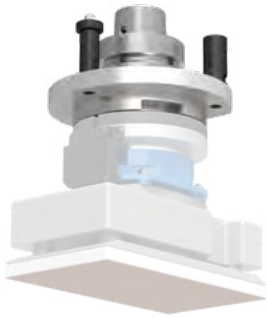


Inquiry form:
www.benztooling.com/en/products

ADDITIONAL OPTIONS: MODULAR DESIGN

1

MACHINE CONNECTION



HSK - F63
BIESSE



SK 30
BIESSE



HSK - F63
Busellato



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



HSK - F63
IMA



HSK - F63
Masterwood



HSK - F63
SCM



HSK - F63
SCM



HSK - F63
Weinig



For further information see p. 106

2

SANDING PLATE



Width 93 mm,
Length 175 mm

POLISHING UNIT – CLASSIC LINE



POLO

TECHNICAL DATA

Max. drive speed n_2	3,000 min ⁻¹
Transmission ratio (n_1 : n_2)	1:1
Weight	about 3.5 kg
Capacity for polishing agent	250 ml



STANDARD DESIGN

- 1  Machine connection
HSK - F63
- 2  Diameter of disc

MACHINING



Polishing

SPECIFICATIONS



Number of
output spindles



Axis angle

ORDER DIRECTLY



Inquiry form:
www.benztooling.com/en/products

ADDITIONAL OPTIONS: MODULAR DESIGN

1



MACHINE CONNECTION



HSK - F63


 For further information see p. 106

2



DIAMETER OF DISC

125

 Additional diameters of disc on request

POLISHING UNIT – CLASSIC LINE

POLO F (FINISHING)

TECHNICAL DATA

Weight

about 1.5kg



STANDARD DESIGN

1



Machine connection
HSK - F63

2

125

Diameter of disc

MACHINING



Polishing

SPECIFICATIONS



Number of
output spindles



Axis angle

ORDER DIRECTLY



Inquiry form:
www.benztooling.com/en/products

ADDITIONAL OPTIONS: MODULAR DESIGN

1



MACHINE CONNECTION



HSK - F63

 For further information see p. 106

2



DIAMETER OF DISC

125

 Additional diameters of disc on request

CUTTING UNIT - CLASSIC LINE

SECO



TECHNICAL DATA

Lubrication	Grease
Max. drive speed n_2	6,000rpm
Transmission ratio ($n_1 : n_2$)	1:1.2
Stroke	5 mm
Weight	about 6.5 kg

STANDARD DESIGN

- 1  Machine Connection
HSK - F63
- 2  Output spindle
Weldon Ø6

MACHINING



Cutting

SPECIFICATIONS



Number of
output spindles



Axis angle



C-angle



Grease lubrication

VIDEO



Unit - live in the application
Scan QR code or go to:
www.youtube.com/BENZWerkzeugsysteme

ORDER DIRECTLY



Inquiry form:
www.benztooling.com/en/products

ADDITIONAL OPTIONS: MODULAR DESIGN

1

MACHINE CONNECTION



HSK - F63
BIESSE



SK 30
BIESSE



HSK - F63
Busellato



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



HSK - F63
IMA



HSK - F63
Masterwood



HSK - F63
SCM



HSK - F63
SCM

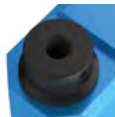


HSK - F63
Weinig


 For further information see p. 106

2

OUTPUT SPINDLE



Weldon Ø6

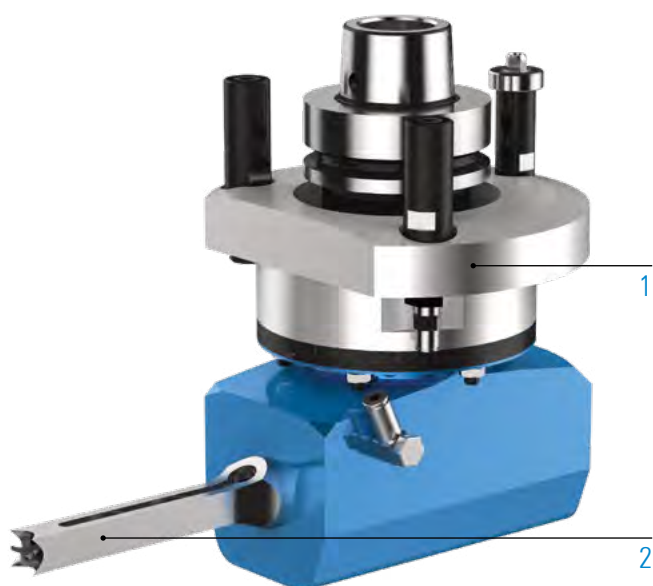
 For further information see p. 108

CHISEL MORTISING UNIT - CLASSIC LINE

RENITO H

TECHNICAL DATA

Lubrication	Grease
Max. drive speed n_2	1,000rpm
Transmission ratio ($n_1 : n_2$)	1:0.73
Max. drive torque M_2	22 Nm
Weight	about 4.5 kg



STANDARD DESIGN

- 1  Machine Connection
HSK - F63
- 2  Chisel cross section
10

MACHINING



Chiselling

SPECIFICATIONS



Number of
output spindles



Axis angle



C-angle



Grease lubrication

VIDEO



Unit - live in the application
Scan QR code or go to:
www.youtube.com/BENZWerkzeugsysteme

ORDER DIRECTLY



Inquiry form:
www.benztooling.com/en/products

ADDITIONAL OPTIONS: MODULAR DESIGN

1

MACHINE CONNECTION



HSK - F63
BIESSE



SK 30
BIESSE



HSK - F63
Busellato



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



HSK - F63
IMA



HSK - F63
Masterwood



HSK - F63
SCM



HSK - F63
SCM



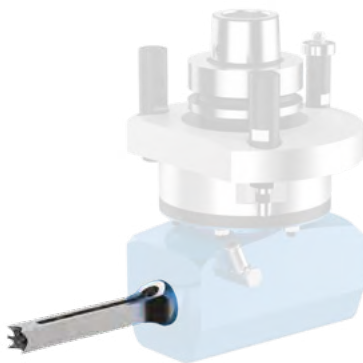
HSK - F63
Weinig



For further information see p. 106

2

CHISEL CROSS SECTION



3,6

4,2

6

8

9

10

11

12

12,7

14

15

16



Additional chisel cross sections on request

CHISEL MORTISING UNIT - CLASSIC LINE

RENITO V

TECHNICAL DATA

Lubrication

Max. drive speed n_2

Transmission ratio ($n_1 : n_2$)

Max. drive torque M_2

Weight

Grease

1,000 rpm

1:1

22 Nm

about 3.5 kg



STANDARD DESIGN

1



Machine Connection
HSK - F63

2



Chisel cross section

MACHINING



Chiselling

SPECIFICATIONS



Number of
output spindles



Axis angle



C-angle



Grease lubrication

ORDER DIRECTLY



Inquiry form:
www.benztooling.com/en/products

ADDITIONAL OPTIONS: MODULAR DESIGN

1

MACHINE CONNECTION



HSK - F63
BIESSE



SK 30
BIESSE



HSK - F63
Busellato



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



HSK - F63
IMA



HSK - F63
Masterwood



HSK - F63
SCM



HSK - F63
SCM



HSK - F63
Weinig

 For further information see p. 106

2

CHISEL CROSS SECTION



3,6

4,2

6

8

9

10

11


12

12,7

14

15

16

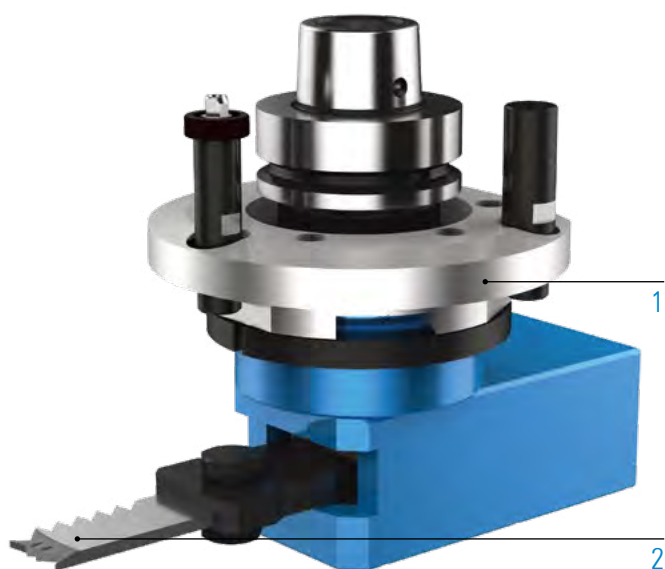
 Additional chisel cross sections on request

HINGE MORTISING UNIT - CLASSIC LINE

CAVO H

TECHNICAL DATA

Lubrication	Grease
Max. drive speed n_2	4,000rpm
Transmission ratio ($n_1 : n_2$)	1:1
Weight	about 4.5kg



STANDARD DESIGN

- 1  Machine Connection
HSK - F63
- 2  Output spindle
Groove width 24

MACHINING



Chiselling

SPECIFICATIONS



Number of
output spindles



Axis angle



C-angle



Grease lubrication

VIDEO



Unit - live in the application
Scan QR code or go to:
www.youtube.com/BENZWerkzeugssysteme

ORDER DIRECTLY

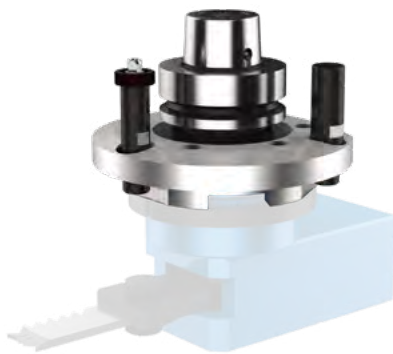


Inquiry form:
www.benztooling.com/en/products

ADDITIONAL OPTIONS: MODULAR DESIGN

1

MACHINE CONNECTION



HSK - F63
BIESSE



SK 30
BIESSE



HSK - F63
Busellato



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



HSK - F63
IMA



HSK - F63
Masterwood



HSK - F63
SCM



HSK - F63
SCM



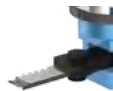
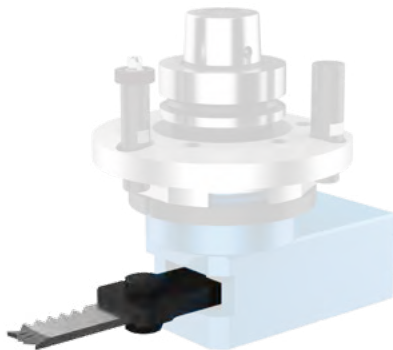
HSK - F63
Weinig



For further information see p. 106

2

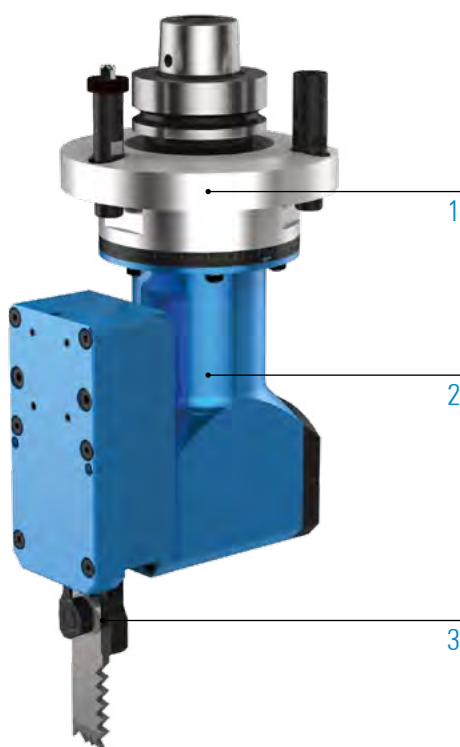
OUTPUT SPINDLE



Groove width 24

HINGE MORTISING UNIT - CLASSIC LINE

CAVO V



TECHNICAL DATA

Lubrication	Grease
Max. drive speed n_2	4,000 rpm
Transmission ratio ($n_1 : n_2$)	1:0.8
Weight	about 8 kg

STANDARD DESIGN

- 1  Machine Connection
HSK - F63
- 2  Head length
- 3  Output spindle
Groove width 24

MACHINING



Chiselling

SPECIFICATIONS



Number of
output spindles



Axis angle



C-angle



Grease lubrication

ORDER DIRECTLY



Inquiry form:
www.benztooling.com/en/products

ADDITIONAL OPTIONS: MODULAR DESIGN

1

MACHINE CONNECTION



HSK - F63
BIESSE



SK 30
BIESSE



HSK - F63
Busellato



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



HSK - F63
IMA



HSK - F63
Masterwood



HSK - F63
SCM



HSK - F63
SCM



HSK - F63
Weinig

 For further information see p. 106

2

HEAD LENGTH



 For further information see p. 107

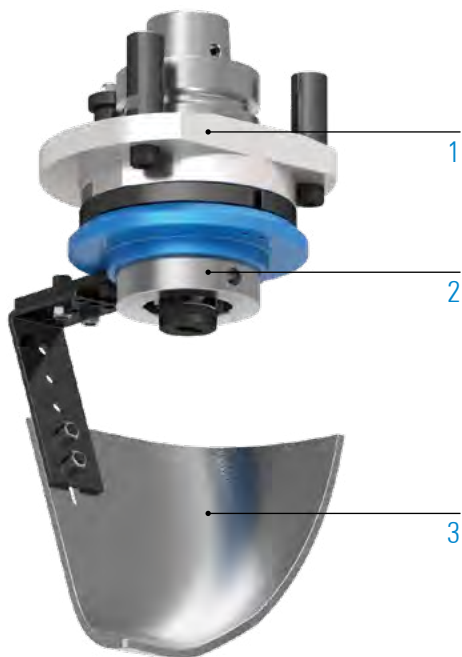
3

OUTPUT SPINDLE



Groove width 24

TOOL HOLDER – CLASSIC LINE WITH CHIP BAFFLE



TECHNICAL DATA

Lubrication
Max. drive speed n_2
Transmission ratio ($n_1: n_2$)
Weight

Grease
15,000rpm
1:1
about 4 kg

STANDARD DESIGN

- 1  Machine connection
HSK - F63
- 2  Output spindle
HSK - F63
- 3  Chip baffle

MACHINING



Milling

SPECIFICATIONS



Number of
output spindles



Axis angle



C-angle



Grease lubrication

ORDER DIRECTLY



Inquiry form:
www.benztooling.com/en/products

ADDITIONAL OPTIONS: MODULAR DESIGN

1

MACHINE CONNECTION



HSK - F63
BIESSE



SK 30
BIESSE



HSK - F63
Busellato



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE /
WEINMANN



HSK - F63
IMA



HSK - F63
Masterwood



HSK - F63
SCM



HSK - F63
SCM



HSK - F63
Weinig



For further information see p. 106

2

OUTPUT SPINDLE



Collet chuck
C25



Arbor Ø 30 /
tool length
15 – 105 mm



HSK - F63



For further information see p. 108

3

CHIP BAFFLE

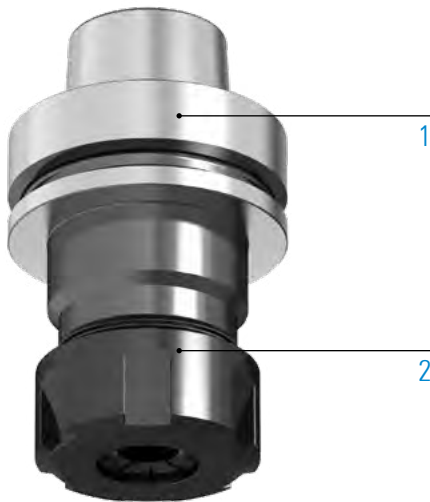


TOOL HOLDER

TECHNICAL DATA

Weight

about 1 kg



STANDARD DESIGN

1



Machine Connection
HSK - F63

2



Output spindle
Collet chuck ER32

MACHINING



Drilling



Milling



Sawing

SPECIFICATIONS



Number of
output spindles



Axis angle

ORDER DIRECTLY



Inquiry form:
www.benztooling.com/en/products

ADDITIONAL OPTIONS: MODULAR DESIGN

1

MACHINE CONNECTION



HSK - F63

 For further information see p. 106

2

OUTPUT SPINDLE



Collet chuck
ER32



Centring Ø40



BENZ
Solidfix® S3

 For further information see p. 108

INDIVIDUAL SOLUTIONS MADE TO MEASURE

Do you need an angle head that does not match any standard parameters? No problem! We develop and produce your angle head made to measure exactly according to your specifications. Small adaptations to standard products and highly complex new developments are our strength - prompt, affordable and with the usual BENZ quality thanks to our modular kits. Extreme conditions everywhere around the world: our components and systems are proven in practical applications and offer you limitless possibilities.

From customer requirement to individual solution

Based on your requirements we define the best possible solution and work out an appropriate concept together with you.



Special units implemented



MULTI V21 multi-spindle drilling head

- Can be loaded via pick-up station
- for machining acoustic plates



MULTI V144 multi-spindle drilling head with motor

- Permanently installed in the machine
- for machining acoustic plates



Combination: Multi-spindle head / Undersurface unit

- For machining tops and bottoms of plates



MULTI V19A multi-spindle unit with individually extendable spindles

- High retention force with spindle locking plates



FLOATING H Tenso floating trimming unit for sawing

- For inserting vertical grooves for Tenso P14 connectors



FLOATING HB floating trimming unit for horizontal drilling

- Vertically floating trimming unit with horizontal tool output; for drilling holes or grooves at a constant distance from the surface of the workpiece



Saw chain unit

- Can be loaded via pick-up station
- for sawing door and window cutouts in prefabricated house constructions



Drive unit

- With 90° swivelling unit, HSK clamping unit and exchangeable sawing unit

UNITS FOR 5 AXIS MACHINING EVEN MORE POWERFUL WITH UNIT TECHNOLOGY

The number of 5-axis machines is growing with each passing year. 5-axis machining is considered the elite division of machining, and for good reason. The complexity of machining requires a high level of competence in the technologies that are used.

The efficiency achieved in this manner can be boosted still further with BENZ units. BENZ aggregates – the extra push in productivity for your 5-axis machine!

5-axis technology

5-axis technology is considered the elite division of machining. With supplementary units, 5-axis machines provide even more powerful and efficient machining.





Advantages of units in 5-axis machining

- Reduction in tool changing times by cycling the C-axis
- Reduction in machining time
- Complete machining of workpieces
- Additional functions such as floating machining



QUATTRO

Four sided angle head
Reduction in tool changing times by cycling the C-axis



MULTI V5

Multi-spindle head
Reduction in machining time



FLOATING V

Floating unit
for additional functions such as floating machining



ANGULO

Corner notching unit
Internal machining that is not possible due to the interference contour of a 5-axis head (e.g. notching inner corners for light cutouts on doors)



DUO

Double sided angle head
Simple and fast insertion of connector systems (e.g. Clamex P from Lamello)



MOULDER

Moulder head
Higher productivity by using the unit, such as when using the moulder head as a multi-blade saw



SIMOLO

Orbital sanding unit
Sanding of surfaces and edges



COLLEVO

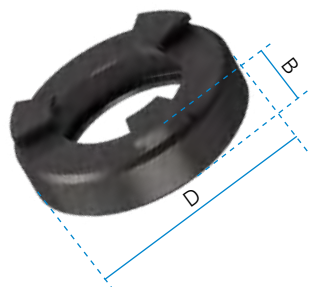
Belt sanding unit
Sanding of front surfaces



ACCESSORIES & SERVICE

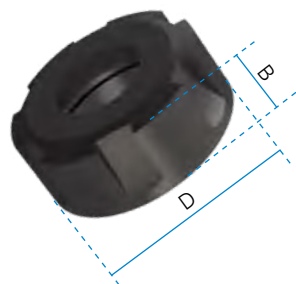
Practical additions for your exchangeable unit.

EXCHANGEABLE UNITS ACCESSORIES



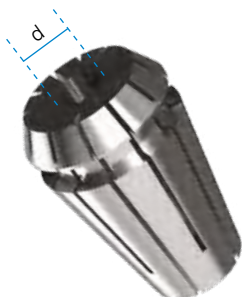
CLAMPING NUT: INTERNALLY LOCATED PER DIN6499

Order No.	Technical data		
	ER	D	B
B135-E3AX	16	M24x1	7,6
B135-E5AX	25	M32x1,5	8,8



CLAMPING NUT: EXTERNALLY LOCATED PER DIN6499

Order No.	Technical data		
	ER	D	B
B135-M4	25 Mini	35	20
B135-E6	32	50	22



COLLET CHUCK: PER DIN6499, REGOFIX SYSTEM SHAPE B

Order No.	Technical data		
	ER	d	increasing by
B134-426E-...	16	1-10*	0,5
B134-430E-...	25	1-16**	1
B134-470E-...	32	3-20**	1

* Collet chuck can clamp up to 0.5 mm smaller than nominal dimension

** Collet chuck can clamp up to 1 mm smaller than nominal dimension

Collet chuck not included in scope of delivery.

Order no. example ER16 / Inner diameter 6 mm

B134-426E-0600

ER 16 d=6



COLLET WRENCH: INTERNALLY LOCATED CLAMPING NUT

Order No.	Technical data		
	ER		
B136-E3AX	16		
B136-E5AX	25		



COLLET WRENCH: EXTERNALLY LOCATED CLAMPING NUT

Order No.	Technical data
	ER
B136-M4	25 Mini
B136-E6	32



HOOK WRENCH DIN1810A

Order No.	Technical data
	Ø
D01810A052055	52–55
D01810A058062	58–62



HOOK WRENCH DIN1810B

Order No.	Technical data
	Ø
D01810B040042	40–42
D01810B045050	45–50
D01810B052055	52–55
D01810B058062	58–62



HANDLE WRENCH

Order No.	Technical data
	Torx
811.00.235	T20
L8317-45963	T30





SINGLE OPEN-END WRENCH

Order No.	Technical data
	SW
KL8317-0005	32
KL8317-0006	36
KL8317-0004	41
KL8317-0003	46



BENZ SOLIDFIX® ADAPTER ACCESSORIES

COLLET CHUCK HOLDER PER DIN6499




Order No.	Technical data		Fig.
	Size	Type	
693.130E534	S3	ER 25	1
B136-E5		ER 25	1
D01810B045050		ER 25	1




693.130E648	S3	ER 32	2
B136-E6		ER 32	2
D01810B045050		ER 32	2

SAW BLADE HOLDER




Order No.	Technical data		Fig.
	Size	Type	
693.040SD38	S3	Arbor Ø30 (TK Ø42 - 2x Ø6) tool length 1.5 - 6 mm	1
D01810B058062		Arbor Ø30 (TK Ø42 - 2x Ø6) tool length 1.5 - 6 mm	1



693.040S0001	S3	Centring Ø30 (TK Ø45/Ø52 - 4x M5)	2
811.00.235		Centring Ø30 (TK Ø45/Ø52 - 4x M5)	2



693.04040S0414	S3	Centring Ø40 (TK Ø52 - 8x M5)	3
811.00.235		Centring Ø40 (TK Ø52 - 8x M5)	3

WELDON HOLDER PER DIN1835B



Order No.	Technical data	
	Size	Type
693.1400606	S3	Ø 6
693.1400808	S3	Ø 8
693.1401028	S3	Ø 10
693.1401232	S3	Ø 12
693.1401432	S3	Ø 14
693.1401635	S3	Ø 16
693.1401842	S3	Ø 18
693.1402046	S3	Ø 20

SEALING PLUGS



Order No.	Technical data	
	Size	
693.581S	S3	

BLANK



Order No	Technical data	
	Ø	L
693.10250100	50	100

ASSEMBLY BLOCK



Order No	Technical data	
	Size	
B300-4-S3	S3	



Services: customized, value-retaining, cost-effective

EXCHANGEABLE UNITS SERVICE

Service repair

- Fast and professional analysis of damage
- Findings and repair recommendations within 5 working days
- On request: general maintenance or refurbishing

ExpressService

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

Individual crash package

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

Preventive maintenance

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



Service installers come to your site anywhere in the world



Knowledgeable service employees answer your questions and help with problems

Spare part management

- Delivery of original precision spare parts
- High availability
- Spare parts express shipment as needed

Global service

- Service technicians visit you on site

Service Hotline

- Skilled service representatives answer your questions and provide additional support in the event of a problem

Contact information: www.benz-tooling.com

MACHINE CONNECTION

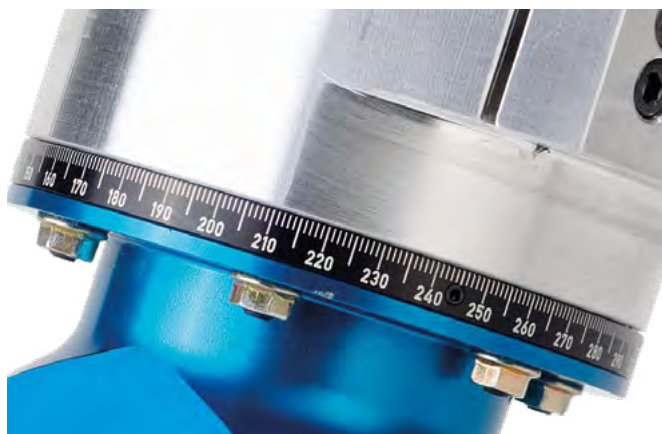
THE INTERFACE TO YOUR MACHINE

Precise fit

There are many machine manufacturers with numerous types of machines for machining wood and composite materials. Each manufacturer generally builds on its own machine concept – and thus on different components. That has a significant effect on exchangeable units. They have to be adapted to the relevant machine type. We help you to make sure that everything fits together precisely. Just tell us your machine model – and we do the rest.

The machine connection

The machine connection consists of the torque support and drive cone of the unit.



Scale ring on the torque support

The head can be rotated 360° around the drive. That allows you to align the exchangeable unit in the tool changer, saving space.

Benz Standard – Machine connections



HSK - F63
BIESSE



SK 30
BIESSE



HSK - F63
Busellato



HSK - F63
Felder



HSK - F63
HOMAG / WEEKE
/ WEINMANN



HSK - F63
IMA



HSK - F63
Masterwood



HSK - F63
SCM



HSK - F63
SCM



HSK - F63
Weinig

Excerpt – additional machine connections



HSK -F63 per
DIN 69893
e.g. HOMAG



HSK -E63 per
DIN 69893
e.g. CMS



SK 30
similar to
DIN 69871A
e.g. BIESSE



SK 40
similar to
DIN 69871A
e.g. MAKKA



SK 30 with
wheelwork
e.g.
MORBIDELLI



BT 30 per
JIS B 6339
e.g. KOMO



BT 35 per
JIS B 6339
e.g. HEIAN



BT 40 per
JIS B 6339
e.g. SHODA



More

LENGTHS / DESIGNS

THE OPTIMUM FOR EACH APPLICATION

Perfect interaction

The interaction between machine, the tools that are used and your workpiece determines which is the right unit length for you. BENZ units are available in 3 different lengths: Short, medium and long. A wide range of different designs are also available for your machining tasks. Units specially designed for sawing, milling, grinding, or a general purpose unit? The choice is yours!

Head length / design

The interaction between machine, the tools that are used and your workpiece determines which is the right unit length for you.

Not sure?
We will be happy to advise you!



Units – Length

The length makes the difference: BENZ units are available in 3 different lengths. In this way we can take into account the different properties of your machine your tool and your workpiece.

S



SHORT

- For cramped working areas in the machine (little distance between the machining table and machine spindle)
- If the changing weight of the tool changer is limited

M



MEDIUM

- The universal length: Covers the majority of machining tasks and tools

L



LONG

- For machining tasks with large tool diameters (saw blades, etc.)
- For machining tasks on high workpieces

OUTPUT SPINDLE CLAMPING OPTIONS

Firmly clamped in

Clamp a wide range of tools including drills, milling cutters or saw blades in one unit. We offer you a large assortment of standard output spindles to do just that. The BENZ Solidfix® modular tool interface offers you great flexibility.

The output spindle

BENZ offers the right output spindle for every tool.



Options output spindles



Collet chuck holder ER25 Mini per DIN6499 with externally located clamping nut



Collet chuck holder ER32 per DIN6499 with externally located clamping nut



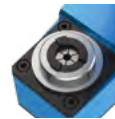
Centring Ø40 (TK Ø52 - 8x M5)/ collet chuck holder ER25A per DIN6499 with internally located clamping nut



Centring Ø30 (TK Ø42 - 2x Ø6)/ collet chuck holder ER25 Mini per DIN6499 with externally located clamping nut



Collet chuck holder ER16A per DIN6499 with internally located clamping nut



Collet chuck holder ER25A per DIN6499 with internally located clamping nut



Collet chuck C25 per DIN 6388 with externally located clamping nut



Centring Ø30 (TK Ø45/ Ø52 - 4x M5)/ Weldon holder Ø10 per DIN1835B



Centring Ø30 (TK Ø52 - 4x M5 / TK Ø48 - 2x Ø6 / Ø8)/ Whistle notch holder Ø16 / Ø20 per DIN1835E



Centring Ø40 (TK Ø45/Ø52 - 8x M5)



Centring Ø40 (TK Ø52 - 8x M5) Weldon holder Ø10 / Ø16 per DIN1835B



Centring Ø16 (TK Ø28 - 4x M6)



Arbor Ø30 (TK Ø42 - 2x Ø6), tool length 1.5 - 6 mm



Arbor Ø30 (TK Ø42 - 2x Ø6), tool length 1.5 - 16 mm



Arbor Ø30 (TK Ø42 - 2x Ø6), tool length 1.5 - 33 mm



Arbor Ø30 (TK Ø42 - 2x Ø6), tool length 1.5 - 52 mm



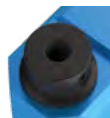
Arbor Ø30 (TK Ø42 - 2x Ø6), tool length 1.5 - 63 mm



Arbor Ø20 (TK Ø32 - 4x M6/ 2x Ø6), tool length 6 - 43 mm



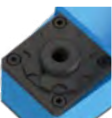
Modular quick-change system BENZ Solidfix® S3



Weldon holder Ø6 per DIN1835B



Weldon holder Ø10 per DIN1835B



Weldon holder Ø12 per DIN1835B



Weldon holder Ø10 / Ø16 per DIN1835B



Whistle notch holder Ø6 per DIN1835E



HSK - F63 per DIN 69063

 Additional designs on request

BENZ SOLIDFIX®

MODULAR QUICK CHANGE SYSTEM

1 unit – 1000 machining possibilities

BENZ Solidfix® is a modular quick change system that allows you to change tools in less than 20 seconds. The time-consuming process of removing the angle head from the machine is avoided, as only the adapter with cutting tool is changed. Replacing the change adapter saves you several angle heads. Your advantage: One angle head

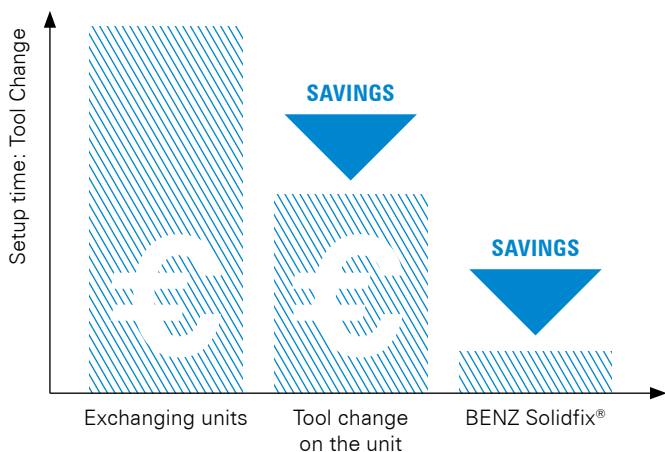
instead of several – and therefore lower investment costs compared to exchanging the complete unit!

BENZ Solidfix® can be used for many different applications including drilling, milling and sawing.



BENZ SOLIDFIX® – PERFORMANCE. PRECISION. HANDLING. SAFETY.

Savings with BENZ Solidfix®



System advantages

- **Modular design** based on angle head and change adapter with different types of output spindle
- **Minimises setup and non-productive time / increases productivity** by changing the preset 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

Tool change



In just a few steps

- **Make yourself familiar with the activation**
To be able to change the adapter, the activation must first be open (small picture above)
- **Insert the adapter and turn it 90°**
- **Distance-controlled clamping to fix the adapter in place**
Turn the clamping screw in as far as it will go (small picture below)

BENZ Solidfix® – Tool change

Scan the QR code to the side with a smartphone and experience how easy it is to change tools with BENZ Solidfix®. You can also visit our YouTube channel to watch the video:

www.youtube.com/BENZWerkzeugsysteme



BENZ SOLIDFIX® SYSTEM DESIGN

DRILL/MILLING HOLDERS

TOOLS



Drill



End milling
cutter



Drill



End milling
cutter

DRILL/MILLING HOLDERS



**Collet chuck holder with
externally located clam-
ping nut per DIN6499**
Clamping range
ER 25 Ø 2–Ø 16
ER 32 Ø 2–Ø 20



**Weldon holder
per DIN1835B**
Clamping range
Ø 6 / Ø 8 / Ø 10 / Ø 12 /
Ø 14 / Ø 16 / Ø 18 / Ø 20



EXCHANGEABLE UNIT



TOOL HOLDER
Presetting of tools is
possible

SAW BLADE HOLDERS

TOOLS



Saw blade



Saw blade



Saw blade

SAW BLADE HOLDERS



Arbor Ø30 (TK Ø42 - 2x Ø6)
tool length 1.5 - 6 mm



Centring Ø30 (TK Ø45/Ø52 -
4x M5)



Centring Ø40 (TK Ø52 - 8x
M5)



EXCHANGEABLE UNIT



TOOL HOLDER
Presetting of tools is
possible

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

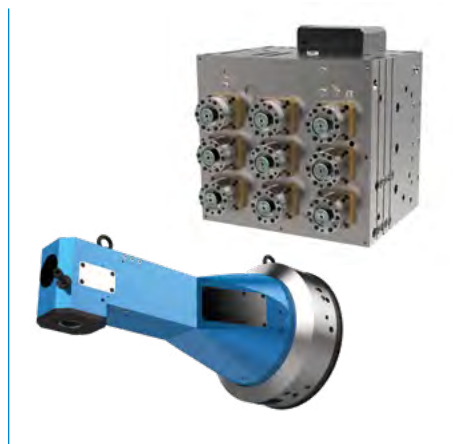
- Angle heads 90°
- Swivel heads
- Multi-spindle heads
- Multi-axis heads
- Sanding units
- Floating head units

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

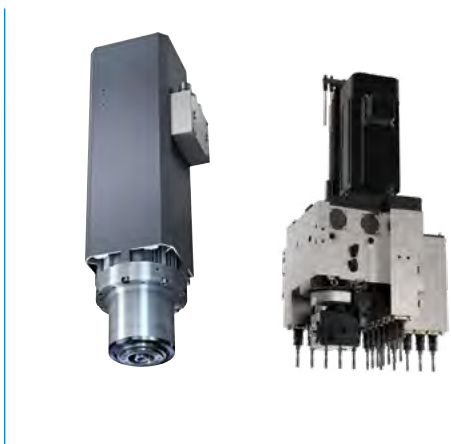
MULTI-SPINDLE HEADS AND LARGE DRILL HEADS

- 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.

PICTOGRAMS AND ABBREVIATIONS OVERVIEW

EXCHANGEABLE UNIT SPECIFICATION

Profile slot position /angle	 <p>Horizontal</p> <p>Horizontal slot</p>	 <p>Vertical / workpiece edge</p> <p>Vertical slot on the workpiece edge</p>	 <p>Vertical / workpiece centre</p> <p>Vertical slot in workpiece centre (up to 15 mm in depth)</p>	 <p>Vertical / workpiece centre</p> <p>Vertical slot in workpiece centre (up to 10 mm in depth)</p>
Machining	 <p>Drilling</p> <p>Das Aggregat eignet sich für Bohrbearbeitungen</p>	 <p>Milling</p> <p>The unit is suitable for milling operations</p>	 <p>Sawing</p> <p>The unit is suitable for sawing operations</p>	 <p>Planing</p> <p>The unit is suitable for planing operations</p>
Number of output spindles (tool holding fixtures)	 <p>1</p> <p>The angle head has one output spindle</p>	 <p>2</p> <p>The angle head has two output spindles</p>	 <p>3</p> <p>The angle head has three output spindles</p>	 <p>4</p> <p>The angle head has four output spindles</p>
Axis angle	 <p>0°</p> <p>Angle head for machining tasks at 0° angle</p>	 <p>90°</p> <p>Angle head for machining tasks at 90° angle</p>	 <p>180°</p> <p>Angle head for machining tasks at 180° angle</p>	 <p>-5° bis +100°</p> <p>Angle head for machining tasks at flexible angle. Any angle can be set.</p>
C-angle	 <p>4 x 90°</p> <p>The exchangeable unit can be rotated 4 x 90°</p>	 <p>360°</p> <p>The exchangeable unit can be rotated 360°</p>		
Lubrication	 <p>Grease lubrication</p> <p>The wheelworks are lubricated with grease</p>	 <p>Oil bath lubrication</p> <p>The wheelworks are lubricated with an oil bath</p>		



Any angle

Slot at any angle



Profile slot depth



Brushing

The unit is suitable for brushing operations



Sanding

The unit is suitable for grinding operations



Polishing

The unit is suitable for polishing operations



Cutting

The unit is suitable for cutting operations



Chiselling

The unit is suitable for chiselling operations



X

The angle head has X output spindles (multi-spindle head)






-15° bis +102°

Angle head for machining tasks at flexible angle. Any angle can be set.

PICTOGRAMS AND ABBREVIATIONS

OVERVIEW

GENERAL SPECIFICATIONS

 <p>Important Information</p> <p>Caution! Important Note. Please read this carefully.</p>
 <p>Service</p> <p>Services, e.g. repair, preventative maintenance, etc.</p>
 <p>Accessories</p> <p>Accessories, e.g. adapter, keys, etc.</p>

ABBREVIATIONS

B	Width
CAD	Computer-aided design
CNC	Computerized Numerical Control
Ø	Diameter
d	Internal diameter
D	External diameter
°	Degrees
kg	Kilograms
min⁻¹	Revolutions per minute
mm	Millimeters
Nm	Newton meters
TK	Semicircle
e.g.	for example

S	Short	M	Medium	L	Long
SO	Soft	ME	Medium	HA	Hard

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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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