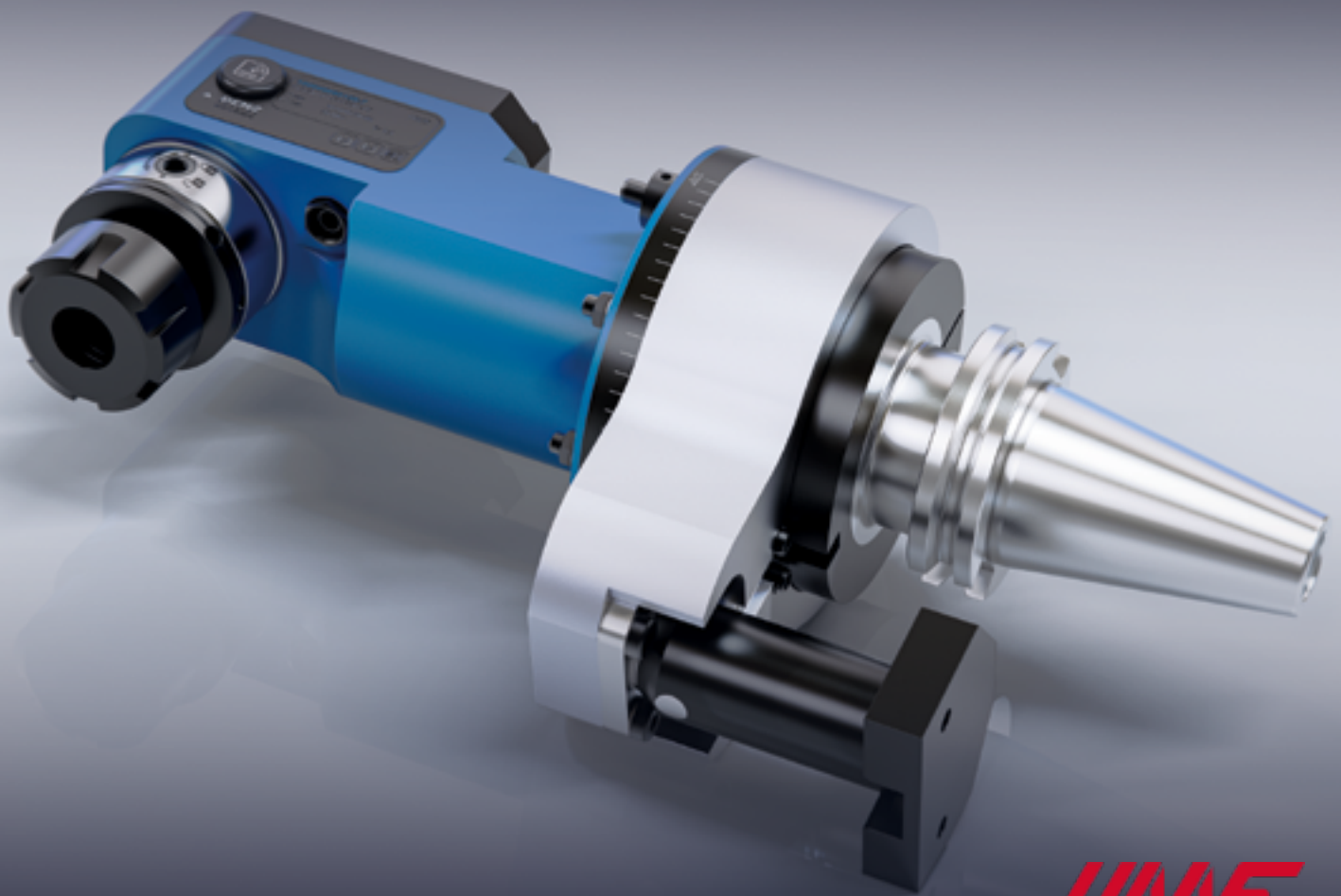


# ANGLE HEADS FOR HAAS MACHINES

Tooling Technology

Metal Machining



**HAAS**  
OEM SUPPLIER

# CONTENT

## ANGLE HEADS FOR HAAS MACHINING CENTERS WITH INTEGRATED C-AXIS

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## ANGLE HEADS FOR HAAS MACHING CENTERS

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# ANGLE HEADS FOR HAAS MACHINING CENTERS WITH INTEGRATED C-AXIS

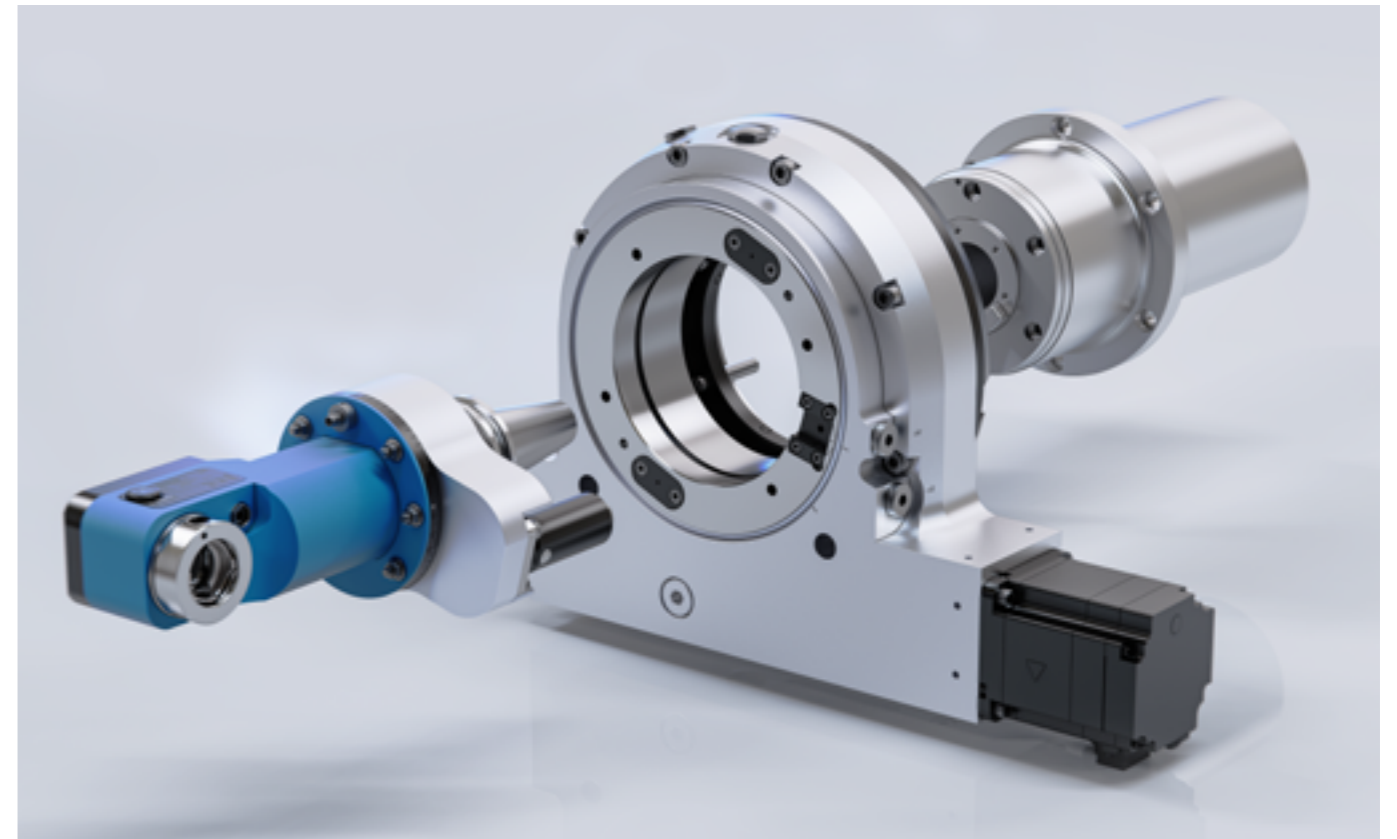
## INNOVATION. PRECISION. PASSION

At BENZ Tooling 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 metal machining, woodworking and composite material processing for more than 75 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.

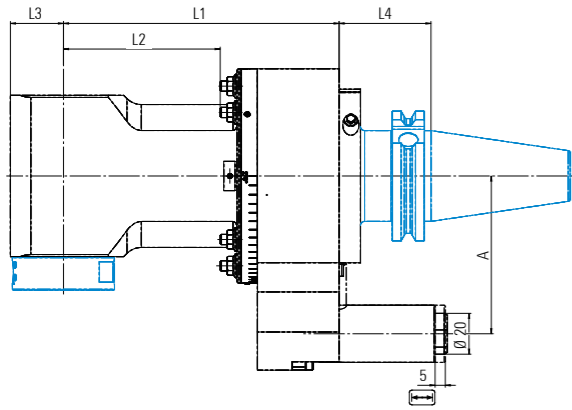
## BENEFITS OF THE C-AXIS – YOUR COMPETITIVE EDGE

- + additional axis for machining complex parts
- + retrofittable for Haas 3-axis CNC machines
- + continuous use thanks to integrated oil mist lubrication
- + increased efficiency, precision and productivity
- + additional support for extra stability during challenging milling operations
- + improved accuracy during milling operations



# ANGLE HEAD MONO WSX

## TECHNICAL DATA



04

$M_{max}$  15  
i 1:1  
 $n_{max}$  10.000 min<sup>-1</sup>

05

$M_{max}$  30 Nm  
i 1:1  
 $n_{max}$  8.000 min<sup>-1</sup>

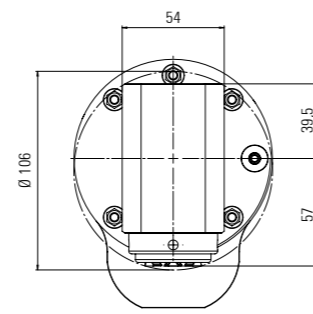
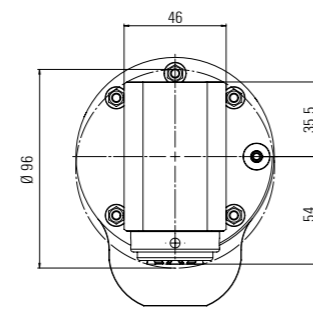
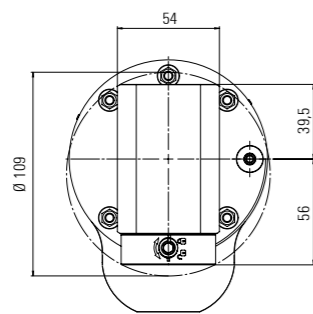
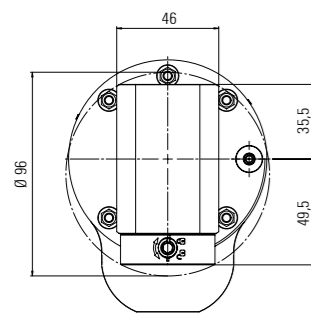
## OUTPUT SPINDLE

BENZ Solidfix® S2

BENZ Solidfix® S3

Collet chuck ER20A

Collet chuck ER25A



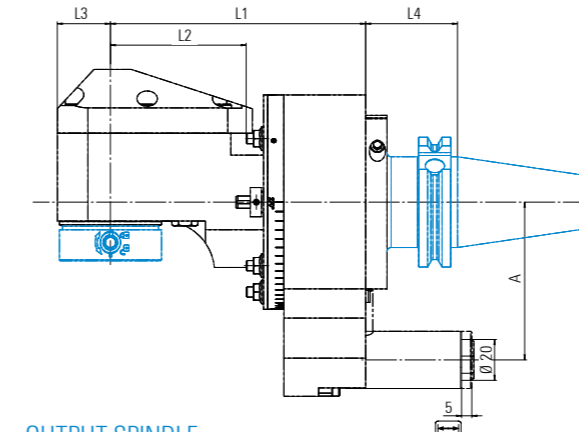
Type	Output spindle	Angle head	Taper	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	A [mm]	n {rpm}	Cooling - EC/IC	KG	Order number
<b>MONO WSX</b>	S2	04	CAT40	145	97	24	45	80	10.000	●	4,3	377WSX04104S2-145
<b>Size 04</b>	ER20A	04	CAT40	145	97	24	45	80	10.000	●	4,3	377WSX04104E4A-145
	S2	04	BT40	145	97	24	53	80	10.000	●	4,6	039WSX19404S2-145
	ER20A	04	BT40	145	97	24	53	80	10.000	●	4,6	039WSX19404E4A-145
	S2	04	HSK63	145	97	24	52	80	10.000	●	4,2	771WSX68604S2-145
	ER20A	04	HSK63	145	97	24	52	80	10.000	●	4,2	771WSX68604E4A-145
<b>MONO WSX</b>	S3	05	CAT40	135	76	26	45	80	8.000	●	5,8	377WSX04105S3-135
<b>Size 05</b>	ER25A	05	CAT40	135	76	26	45	80	8.000	●	5,7	377WSX04105E5A-135
	S3	05	BT40	135	76	26	53	80	8.000	●	6,1	039WSX19405S3-135
	ER25A	05	BT40	135	76	26	53	80	8.000	●	6,0	039WSX19405E5A-135
	S3	05	HSK63	135	76	26	52	80	8.000	●	5,7	771WSX68605S3-135
	ER25A	05	HSK63	135	76	26	52	80	8.000	●	5,6	771WSX68605E5A-135

Weights of quick-change adapter and cutting tool are not considered.

If you purchase an angle head with BENZ Solidfix®, please mind, that adapters are not included.

# ANGLE HEAD FORTE WWX

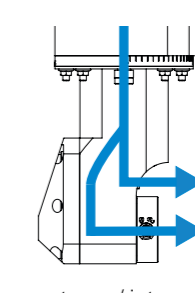
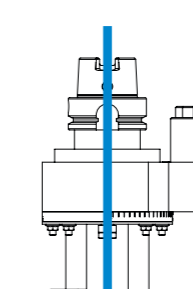
## TECHNICAL DATA



## COOLANT SUPPLY

from the machine

to the cutting edge



externe / interne Kühlung

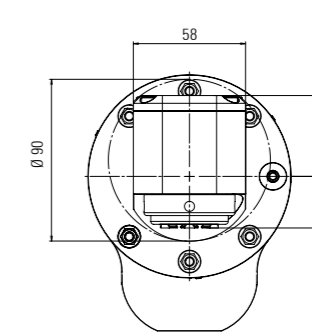
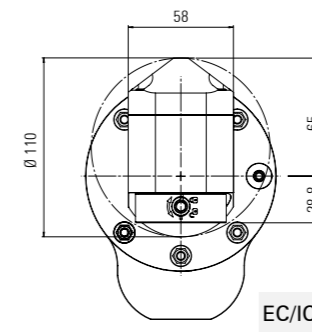
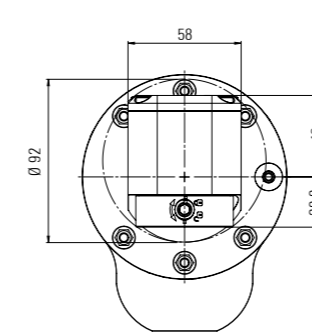
05

$M_{max}$  30 Nm  
i 1:1  
 $n_{max}$  8.000 min<sup>-1</sup>

## OUTPUT SPINDLE

BENZ Solidfix® S3

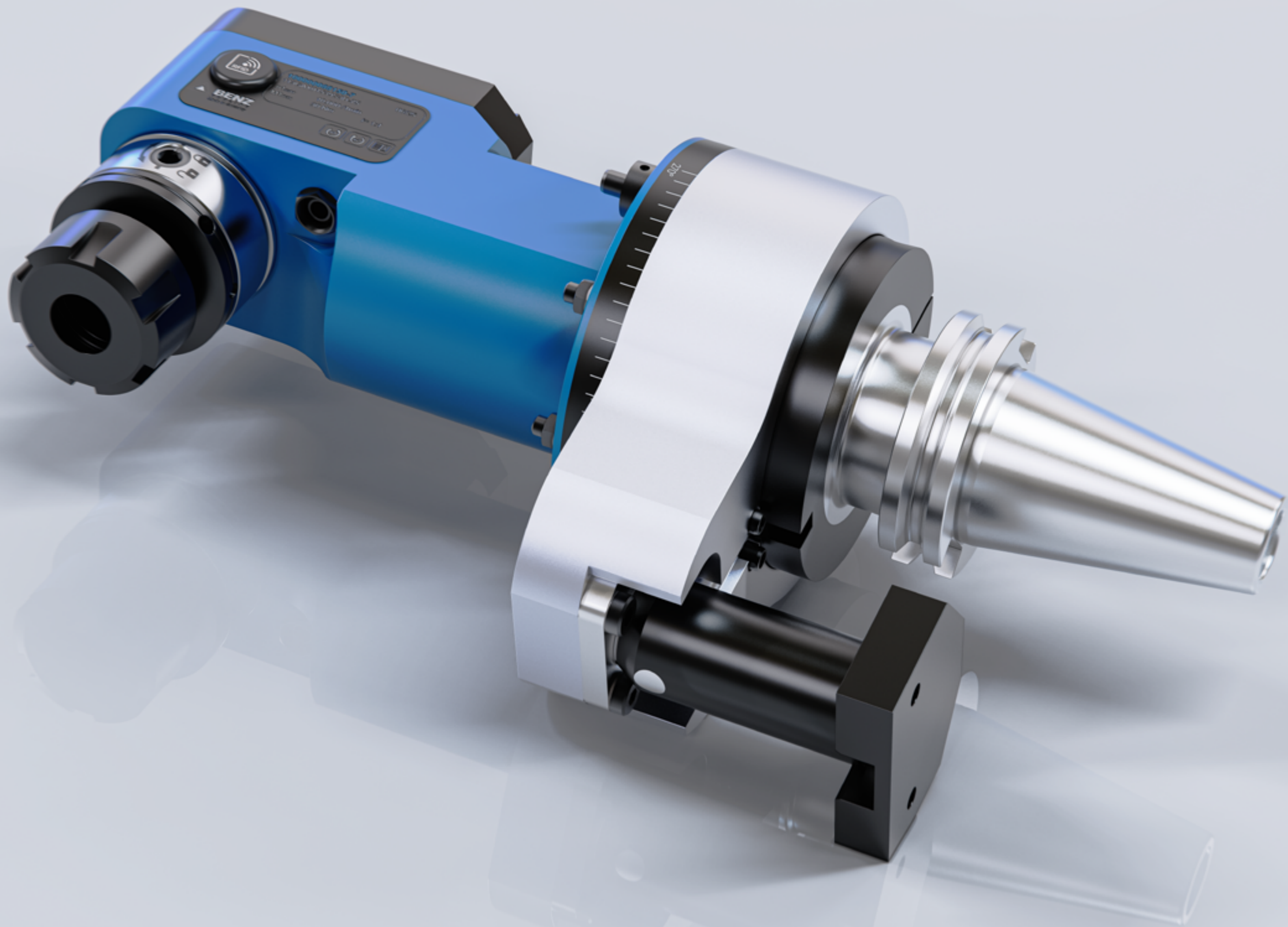
Collet chuck ER25A



Type	Output spindle	Angle head	Taper	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	A [mm]	n {rpm}	Cooling - EC/IC	KG	Order number
<b>FORTE WWX</b>	S3	05	CAT40	172	113	26	45	80	8.000	●	6,0	377WWX04105S3-172
<b>Size 05</b>	S3	05	CAT40	172	113	26	45	80	8.000	●	6,2	378WWX04105S3-172
	ER25A	05	CAT40	172	113	26	45	80	8.000	●	6,0	377WWX04105E5A-172
	S3	05	BT40	172	113	26	53	80	8.000	●	6,3	039WWX19405S3-172
	S3	05	BT40	172	113	26	53	80	8.000	●	6,5	339WWX19405S3-172
	ER25A	05	BT40	172	113	26	53	80	8.000	●	6,3	039WWX19405E5A-172
	S3	05	HSK63	172	113	26	52	80	8.000	●	5,9	771WWX68605S3-172
	S3	05	HSK63	172	113	26	52	80	8.000	●	6,1	771WWX68605S3-172
	ER25A	05	HSK63	172	113	26	52	80	8.000	●	5,9	771WWX68605E5A-172

Weights of quick-change adapter and cutting tool are not considered.

If you purchase an angle head with BENZ Solidfix®, please mind, that adapters are not included.



# ANGLE HEADS FOR HAAS MACHING CENTERS

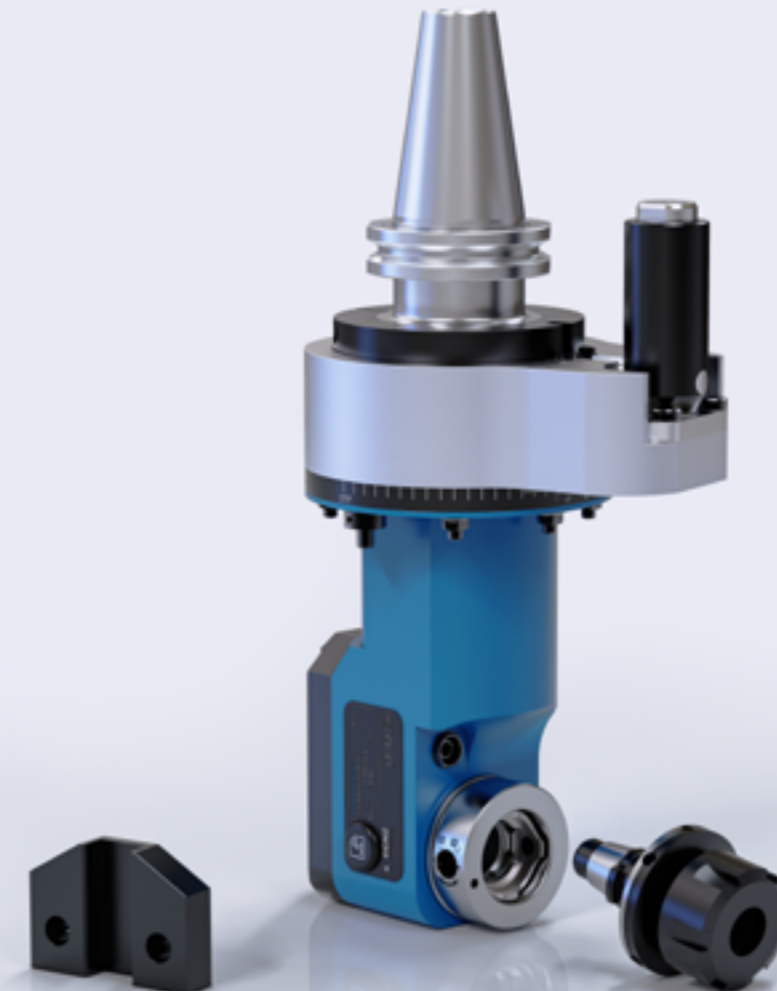
BENZ SELECT LINE: QUICK DELIVERY. ATTRACTIVE PRICING. BENZ SOLIDFIX®

Our most popular angle heads MONO WSX and FORTE WWX are available in the BENZ Select Line program for HAAS machining centers.

Benefit from attractive prices and fast delivery times thanks to the pre-configuration of the most common features: size, output spindle, taper and torque support.

BENZ Select Line products are equipped with our quick-change system BENZ Solidfix®. Benefits for you are even more flexibility and further cost savings – all in the well-know BENZ quality.

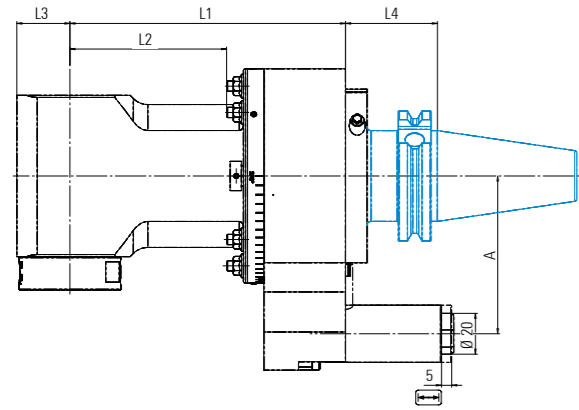
including adapter  
and stop block



see video to  
learn more

# BENZ SELECT LINE – MONO WSX

## TECHNICAL DATA

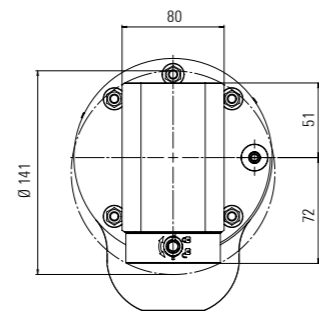
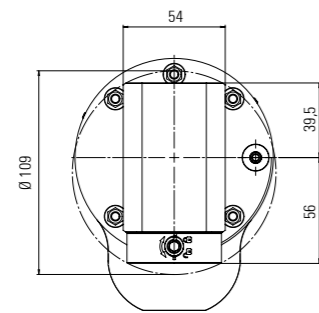
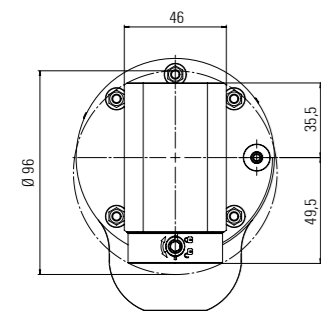



### OUTPUT SPINDLE

BENZ Solidfix® S2


BENZ Solidfix® S3

BENZ Solidfix® S4




**04** 


$M_{max}$  15 Nm  
 $i$  1:1  
 $n_{max}$  10.000 min<sup>-1</sup>

**05** 


$M_{max}$  30 Nm  
 $i$  1:1  
 $n_{max}$  8.000 min<sup>-1</sup>

**07** 

$M_{max}$  70 Nm  
 $i$  1:1  
 $n_{max}$  6.000 min<sup>-1</sup>

Type	Output spindle	Angle head	Taper	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	A [mm]	n {rpm}	Cooling - EC/IC	+  Order number
<b>MONO WSX</b>											
<b>Size 04</b>	S2 x ER20A	04	CAT40	145	97	24	45	65	10.000	●	4,4 377WSX00204S2-145HAA
<b>MONO WSX</b>	S3 x ER25A	05	SK40	135	77	26	45	65	8.000	●	6,0 040WSX00205S3-135HAA
<b>Size 05</b>	S3 x ER25A	05	CAT40	135	77	26	45	65	8.000	●	6,0 377WSX00205S3-135HAA
	S3 x ER25A	05	CAT50	135	77	26	45	110	8.000	●	8,6 107WSX00405S3-135HAA
<b>MONO WSX</b>	S4 x ER32A	07	BT40	150	88	35	53	65	6.000	●	9,6 039WSX00207S4-150HAA
<b>Size 07</b>	S4 x ER32A	07	CAT50	150	88	35	45	110	6.000	●	12,1 107WSX00407S4-150HAA



Please mind the changing weight of the tool changer.

 Drawing shows a sample configuration. Taper available in HSK63, SK40, BT40, SK50, BT50. Weights of quick-change adapter and cutting tool are not considered.

### SCOPE OF DELIVERY

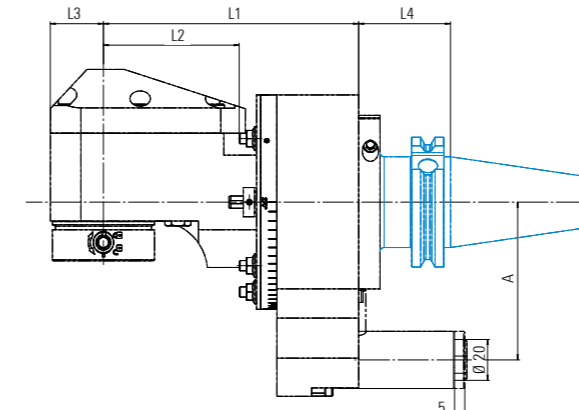
Angle head with modular quick-change system BENZ Solidfix® incl. 1 adapter (Type Collet Chuck ER) and 1 stop block

### OPTIONAL ACCESSORIES

Type	Size	Order number
 Mounting block	Allen key	S3 x ER25 S3-SET-0001
 Hook wrench	Clamping wrench	S4 x ER32 S4-SET-0001

# BENZ SELECT LINE – FORTE WWX

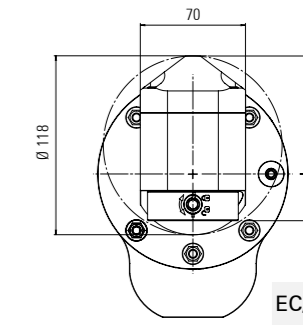
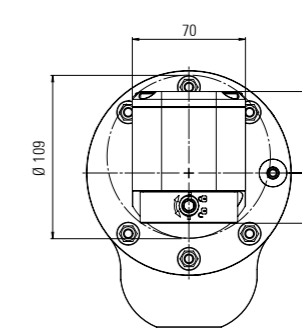
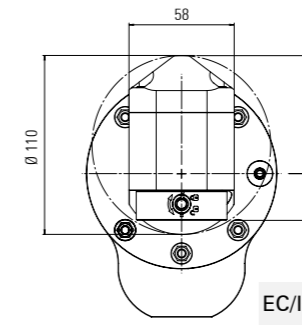
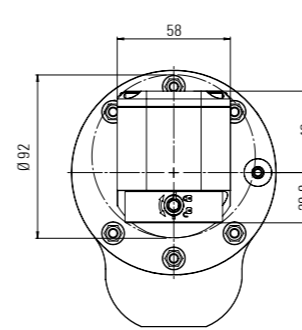
## TECHNICAL DATA





### OUTPUT SPINDLE



BENZ Solidfix® S3

BENZ Solidfix® S4




**05**  


$M_{max}$  30 Nm  
 $i$  1:1  
 $n_{max}$  8.000 min<sup>-1</sup>

**07**  

$M_{max}$  70 Nm  
 $i$  1:1  
 $n_{max}$  6.000 min<sup>-1</sup>

Type	Output spindle	Angle head	Taper	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	A [mm]	n {rpm}	Cooling - EC/IC	+  Order number
<b>FORTE WWX</b>											
<b>Size 05</b>	S3 x ER25A	05	SK40	172	113	26	45	65	8.000	●	6,1 040WWX00205S3-135HAA
	S3 x ER25A	05	SK40	172	113	26	45	65	8.000	●	6,3 240WWX00205S3-172HAA
	S3 x ER25A	05	CAT40	172	113	26	45	65	8.000	●	6,1 377WWX00205S3-172HAA
	S3 x ER25A	05	CAT40	172	113	26	45	65	8.000	●	6,2 378WWX00205S3-172HAA
	S3 x ER25A	05	CAT50	172	113	26	45	110	8.000	●	8,9 107WWX00405S3-172HAA
	S3 x ER25A	05	CAT50	172	113	26	45	110	8.000	●	9,1 354WWX00405S3-172HAA
<b>FORTE WWX</b>	S4 x ER32A	07	CAT50	200	138	35	45	110	6.000	●	12,1 107WWX00407S4-200HAA
<b>Size 07</b>	S4 x ER32A	07	CAT50	200	138	35	45	110	6.000	●	12,3 354WWX00407S4-200HAA



Please mind the changing weight of the tool changer.

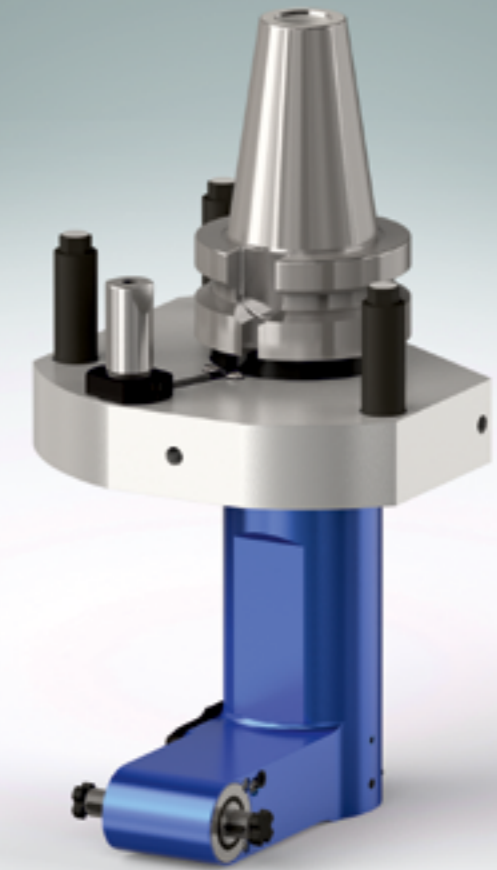
 Drawing shows a sample configuration. Taper available in HSK63, SK40, BT40, SK50, BT50. Weights of quick-change adapter and cutting tool are not considered.

### SCOPE OF DELIVERY

Angle head with modular quick-change system BENZ Solidfix® incl. 1 adapter (Type Collet Chuck ER) and 1 stop block

### OPTIONAL ACCESSORIES

Type	Size	Order number
 Mounting block	Allen key	S3 x ER25 S3-SET-0001
 Hook wrench	Clamping wrench	S4 x ER32 S4-SET-0001



# BENZ ANGLE HEADS TO MACHINE YOUR PRODUCTS

BENZ SELECT LINE  
PREDEFINED STANDARD

Most popular angle head configurations

CUSTOMIZABLE PRODUCTS  
ADAPTABLE

Adaptable standard angle heads

UNIQUE SOLUTIONS  
CUSTOM-MADE

Individual products for your needs



angle head program

# BENZ MODULAR QUICK CHANGE SYSTEM

## BENZ SOLIDFIX®

### AN INVESTMENT WORTH MAKING

Beside higher rpms and higher accuracy the reduction of set up and machine downtimes is the main focus in the manufacturing industry. A crucial component is the integration of a modular tool interface.

The basic principle and key advantage is that the tool adapters can be preset outside the machine during the machining process. The preset adapters are ready-to-use and can be changed very quickly on the basic unit once needed.

### BENZ SOLIDFIX®

As a customer, you enhance the operating times of your machine and save costs at the same time.

Thanks to the modular design, only the adapters need to be changed – the basic tool remains on the machine. Additionally the purchase of extra units can be reduced to a minimum.

Using BENZ Solidfix® you benefit from one of the most efficient quick-change systems in the world.



### PERFORMANCE. PRECISION. HANDLING. SAFETY.



#### Minimize setup & non-productive time

increase productivity by changing the preset tool within seconds



#### Low investment overhead

angle head remains on the machine and only the adapter needs to be changed; fewer angle heads are needed overall



#### Easy handling

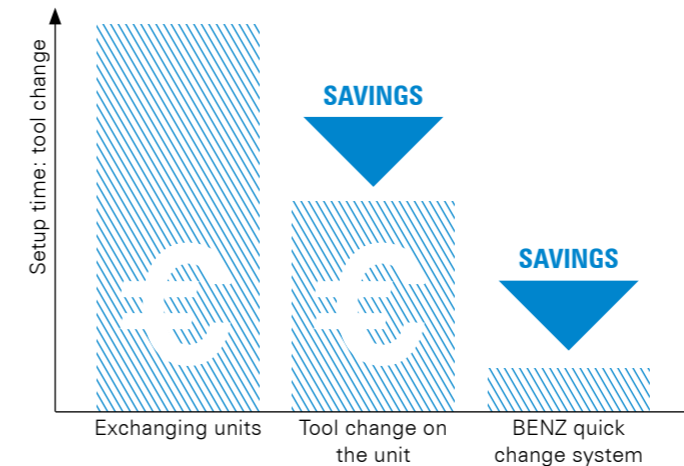
one-hand operation without a special tool



#### Operating safety

cannot come off accidentally

### REDUCE SETUP TIME AND SAVE COSTS WITH BENZ QUICK CHANGE SYSTEMS



A tool change, during which the entire unit is removed from the machine, results in high machine downtimes. By changing the cutting tool directly on the unit, set-up costs can already be reduced by 40%.

This savings can be extended with modular quick-change systems. Here the cutting tool is measured outside the machine in the presetting device. Therefore replacing the adapter only requires a few seconds.

You save 90% of your original setup costs! Additionally you reduce your reject rate as the first part is already a good part.

### OUTPUT SPINDLES ACCESSORIES

Please see our catalog for detailed information on our modular quick change systems as well as all accessories.



- adapters BENZ Solidfix®
- accessories for collet chucks
- wrenches
- miscellaneous



download catalog



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