BENZ TOOLING

HAIMER
Quality Wins.

BENZ Solidfix®/ HAIMER Duo-Lock

SOLUTIONS FOR TURNING APPLICATIONS

HAIMER DUO-LOCK ON BENZ CNC UNITS



www.benztooling.com

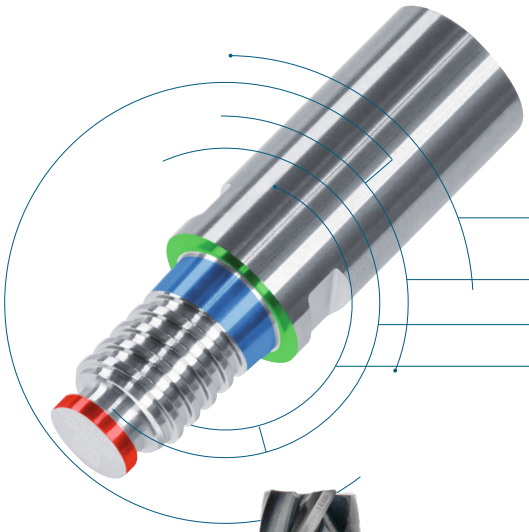
www.haimer.com

HAIMER

BENZ TOOLING

HAIMER DUO-LOCK & BENZ SOLIDFIX®

Your optimal solution for high-performance cutting with a modular quick-change system



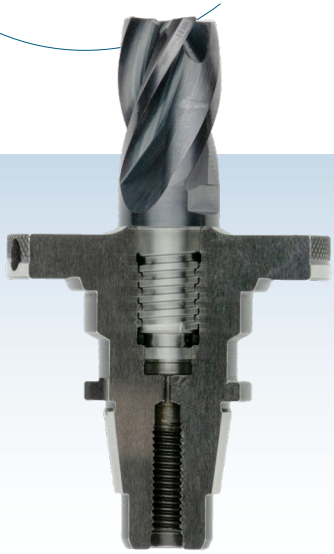
THE ADVANTAGES OF BOTH SYSTEMS ARE OBVIOUS:

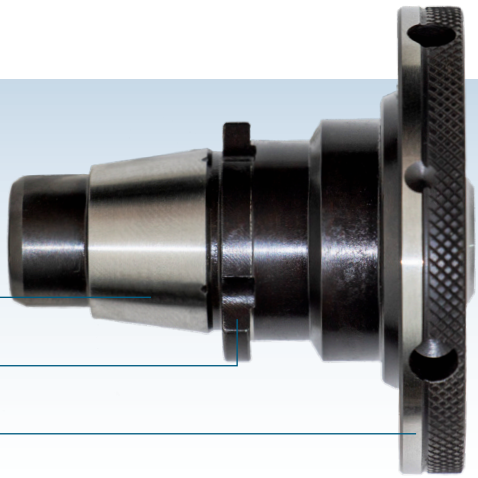
Duo-Lock interface run-out accuracy of 5 µm

Double cone surface and front cone – high precison positioning and support of machining forces

Optimal distribution of forces across the whole thread

Additional contact area to absorb the bending moments created by the cutting forces





Centering of Taper

Safety bayonet

Planar

PERFORMANCE

- Compact design
- Large planar contact surface
- High rigidity (milling capable)
- High transmission of torque
- High speed (balancing-neutral design)

HANDLING

- Quick change, changing in < 20 seconds
- One-hand operation
- Simple handling without the need of special tools
- Resistance controlled clamping (180°) – no need to observe torque
- Ejection feature

PRECISION

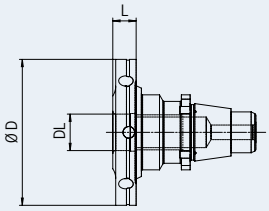
- Extremely high concentricity < 5 µm at 30 mm
- High repeatability
- Central, cross-force-free transmission of forces
- Play-free centering of taper

SAFETY

- Securing device via safety bayonet
- Self-locking clamp function
- Avoidance of operating errors
- Fulfills machinery directive 2006/42/EG

OPTIONS FOR APPLICATIONS

Standard product range of BENZ Solidfix® Adpater with the HAIMER Duo-Lock interface

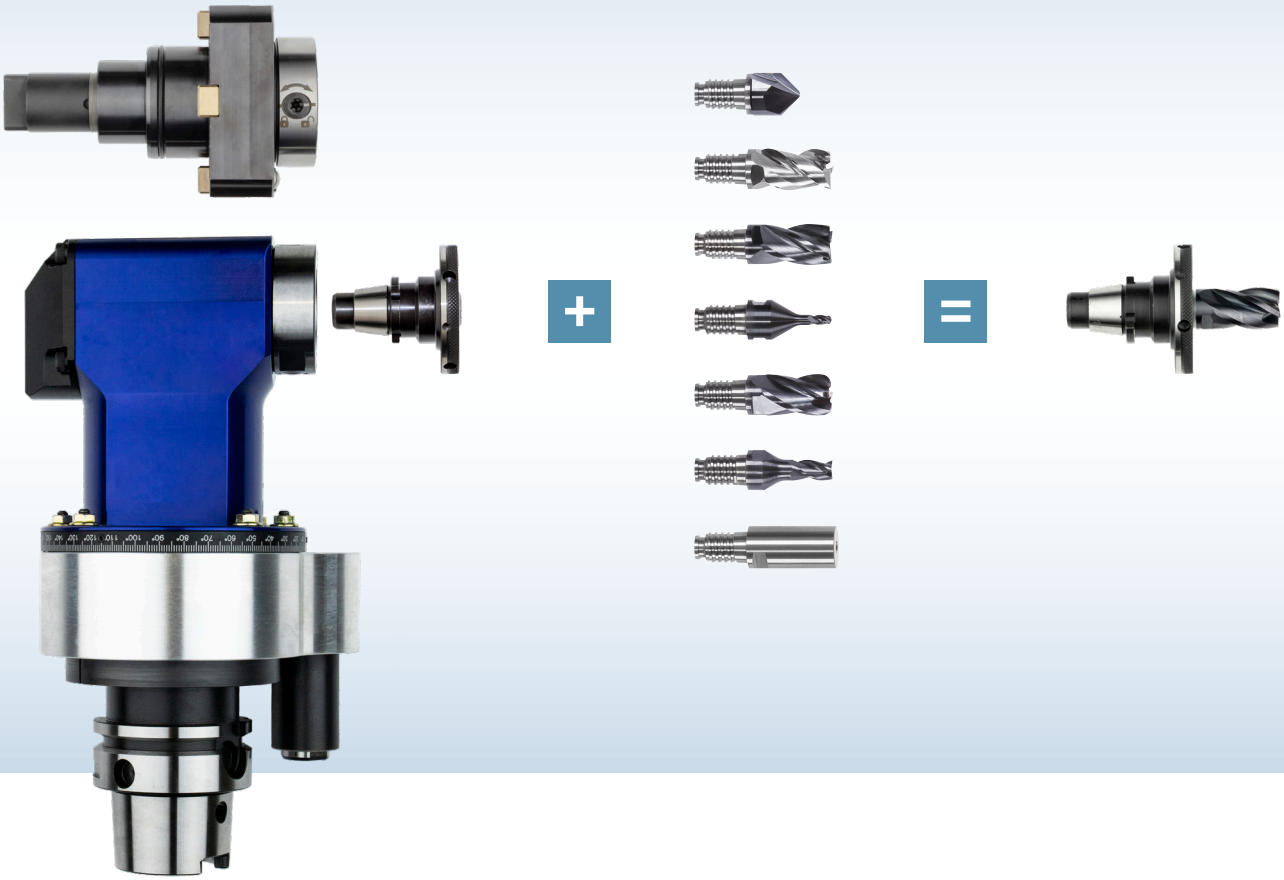
VERSION					BENZ order no.	HAIMER order no.
Technical drawing	BENZ Soldifix®	HAIMER Duo-Lock	Ø D	Length		
	S3	DL10	50	8 mm	693.2871008	75.SFS3.DL10.080
	S3	DL12	50	8 mm	693.2871208	75.SFS3.DL12.080
	S3	DL16	50	8 mm	693.2871608	75.SFS3.DL16.080
	S4	DL12	63	9 mm	694.2871209	75.SFS4.DL12.090
	S4	DL16	63	9 mm	694.2871609	75.SFS4.DL16.090
	S4	DL20	63	9 mm	694.2872009	75.SFS4.DL20.090
	S5	DL16	75	10 mm	695.2871610	75.SFS5.DL16.100
	S5	DL20	75	10 mm	695.2872010	75.SFS5.DL20.200
	S5	DL25	75	10 mm	695.2872510	75.SFS5.DL25.250

ADVANTAGES OF DUO-LOCK

- Large range of Duo-Lock cutting tools
- Standardized cutting lengths, 0,75xD, 1,5xD, and 3xD
- Suitable accessories to exchange tools in different applications

To select the right Duo-Lock tool check our HAIMER delivery program.

FLEXIBLE SYSTEM FOR HIGH-PERFORMANCE CUTTING



HAIMER

BENZ TOOLING

Customized solutions for tight spaces:

BENZ SLIMLINE ANGLE HEAD WITH HAIMER DUO-LOCK

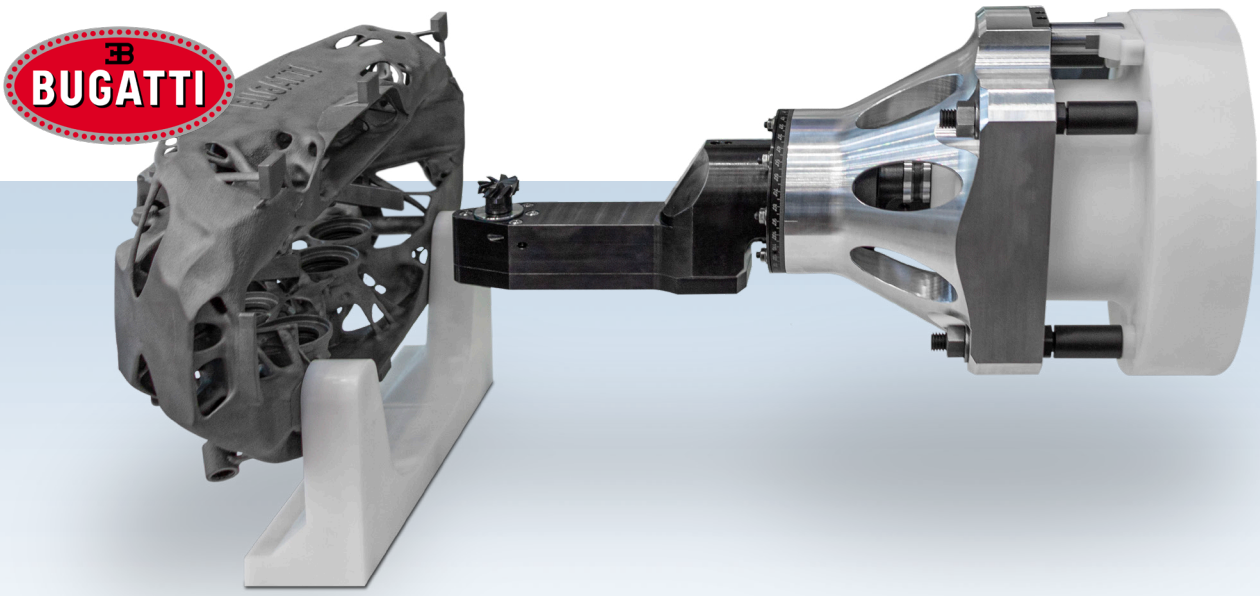
The automobile manufacturer Bugatti, together with its partners BENZ, HAIMER, Bionic Production and Vogt Engineering, implemented an absolutely prestigious project: Together, the companies succeeded in producing an additively manufactured brake caliper for a Bugatti Chiron in series production. It is the largest additively printed titanium component of its kind.

When the brake caliper in the Bugatti Chiron is used at speeds of up to 490.5 km/h, the recently set new world speed record, it has to take on considerable safety tasks. As a result, the highest demands are placed on component quality.

For the final processing of the functional surfaces such as piston chambers, seal seats and end positions for pistons and linings, BENZ and HAIMER developed a special slim-line angle head with a Duo-Lock interface. The angle head is equipped with a special adjustable support. In this way, optimal stability between the angle head and the milling machine can be achieved, which in turn has a positive effect on the machining results. “At the moment, the milling operations with the angle head and the integrated Duo-Lock spindle are designed for 3,000 RPM. This is ideal for use at Bugatti and for processing the functional surfaces on the titanium additive part. In principle, however, angle heads of this design and size can also be driven at higher speeds, up to a maximum of 8,000 RPM,” assures Benz authorized representative and technical manager Christoph Zeller.

Due to the limited space available when machining the functional surfaces of the brake calliper, it was not possible to integrate a modular quick-change system into the angle head. For this reason, the decision was made to use a very compact Duo-Lock direct mount. In addition, HAIMER designed a special milling tool with which all machining tasks can be carried out without changing tools. The available space could thus be optimally used. Machining the trapezoidal grooves in particular posed a number of challenges for the project team. "In order for us to be able to implement the application at all, we had to reduce the angle head from the standard height of around 50 mm to less than 40 mm, without compromising the performance of the product," says Christoph Zeller, describing the demanding task.

The final result is impressive: thanks to the know-how of all project partners, the prerequisites have now been created for the additively manufactured brake calipers for the Bugatti Chiron to be reliably finished in series in the future. This project also emphasized that additive manufacturing and machining are not in contradiction.



BENZ GmbH Werkzeugsysteme | Kinzigpark 3 | 77723 Gengenbach | Germany
+49 (0) 7803 504 300-0 info@benztooling.com www.benztooling.com

Haimer GmbH | Weiherstraße 21 | 86568 Igenhausen | Deutschland
+49 (0) 8257 - 99 88-0 haimer@haimer.de www.haimer.de

F-181864-DE-0920
2.0 M&S – 1. Issue 11/20 – EN
Technical data subject to change without prior notice