



HAIMER.
Quality Wins.



M A S T E R C A T A L O G

HAIMER®



HAIMER.

Tool
Holders

TOOL HOLDERS

THE SUITABLE CLAMPING TECHNIQUE FOR ALL TYPES OF MACHINING APPLICATIONS

Every industry has its specific requirements for tool holding. The range of applications varies from high speed cutting of aluminum to heavy machining of titanium.

For each industry with its typical machining applications HAIMER offers the right clamping technology. To find the suitable product for your specific application, please choose your industry.

Industry



Die and mold, electronics and medical engineering



Automotive engineering



General mechanical engineering



Aerospace industry



Heavy machinery industry

Requirements for tool holding

Suitable tool holder

- High Speed Cutting (HSC)
- Slim tooling
- Long protruding lengths for deep cavities
- Mostly low cutting forces at high rpm
- Vibration dampening features
- 5-axis machining
- High flexibility in tool clamping
- Modular system with shrink fit extensions

- Mini Shrink
- Power Mini Shrink Chuck
- Shrink Fit Chuck standard and extensions
- Power Collet Chuck
- High-Precision Chuck and extensions
- ER Collet Chuck
- Duo-Lock Die and Mold Chuck

- Process reliability in the series production
- Machining of deep bores
- Pull out protection for cutting tools with Safe-Lock
- Consistent high quality in the procurement of spare parts

- Shrink Fit Chuck standard and extensions
- Power Shrink Chuck
- ER Collet Chuck

- High flexibility of tool clamping
- Tool holders for universal usage
- Vibration-free machining
- Modular system with shrink fit extensions

- Shrink Fit Chuck standard and extensions
- Power Shrink Chuck
- ER Collet Chuck
- High-Precision Chuck and extensions
- Power Collet Chuck

- Low vibrations at high speed for aluminum cutting
- High cutting capacity (High Performance Cutting, HPC)
- Extreme rigidity and clamping force for titanium machining
- Pull out protection for cutting tools with Safe-Lock

- Shrink Fit Chuck standard and extensions
- Power Shrink Chuck
- Heavy Duty Chuck and extensions
- Power Collet Chuck
- High-Precision Chuck and extensions
- ER Collet Chuck

- Machining of large steel and cast parts (e.g. gear housings)
- High cutting forces at low to medium rpm
- High rigidity, even at long protruding lengths

- Shrink Fit Chuck standard
- Power Shrink Chuck
- Heavy Duty Chuck and extensions
- ER Collet Chuck
- Power Collet Chuck

ARE YOU READY FOR THE NEXT GENERATION OF MACHINING EFFICIENCY?

All shrink fit holders are not created equal. Choose HAIMER holders for best results.

Total quality control

- All made at HAIMER in Germany
- Consistent material
- High-temperature resistant special steel
- High clamping force
- Long clamping bore
- Best runout accuracy
- TIR within 0.00012" at 3 times diameter
- Patented back-up screw
- Prebalanced to G2.5 @ 25,000 RPM
- Fine balancing with set-screws possible
- Cool Jet and Cool Flash coolant delivery available
- Bore for the data chip standard
- "DIN-B" standard
- AT3 taper or better on steep taper
- HSK specialists
- Many tapers available

Shrinking holders from HAIMER

- Power Shrink
- Mini Shrink
- Heavy Duty Shrink
- Safe-Lock
- Extensions

Tapers

- CAT40/CAT50
- CAT40/CAT50 with face contact
- BT30/BT40/BT50
- BT30/BT40/BT50 with face contact
- SK30/SK40/SK50
- HSK-32A/E
- HSK-40A/E
- HSK-50A/E
- HSK-63A/F
- HSK-80A
- HSK-100A
- HSK-80F Makino
- HSK-25E
- HSK-125A
- PSC 63

Balancing quality:

Fine-balanced to G2.5 at 25,000 rpm

The shank:

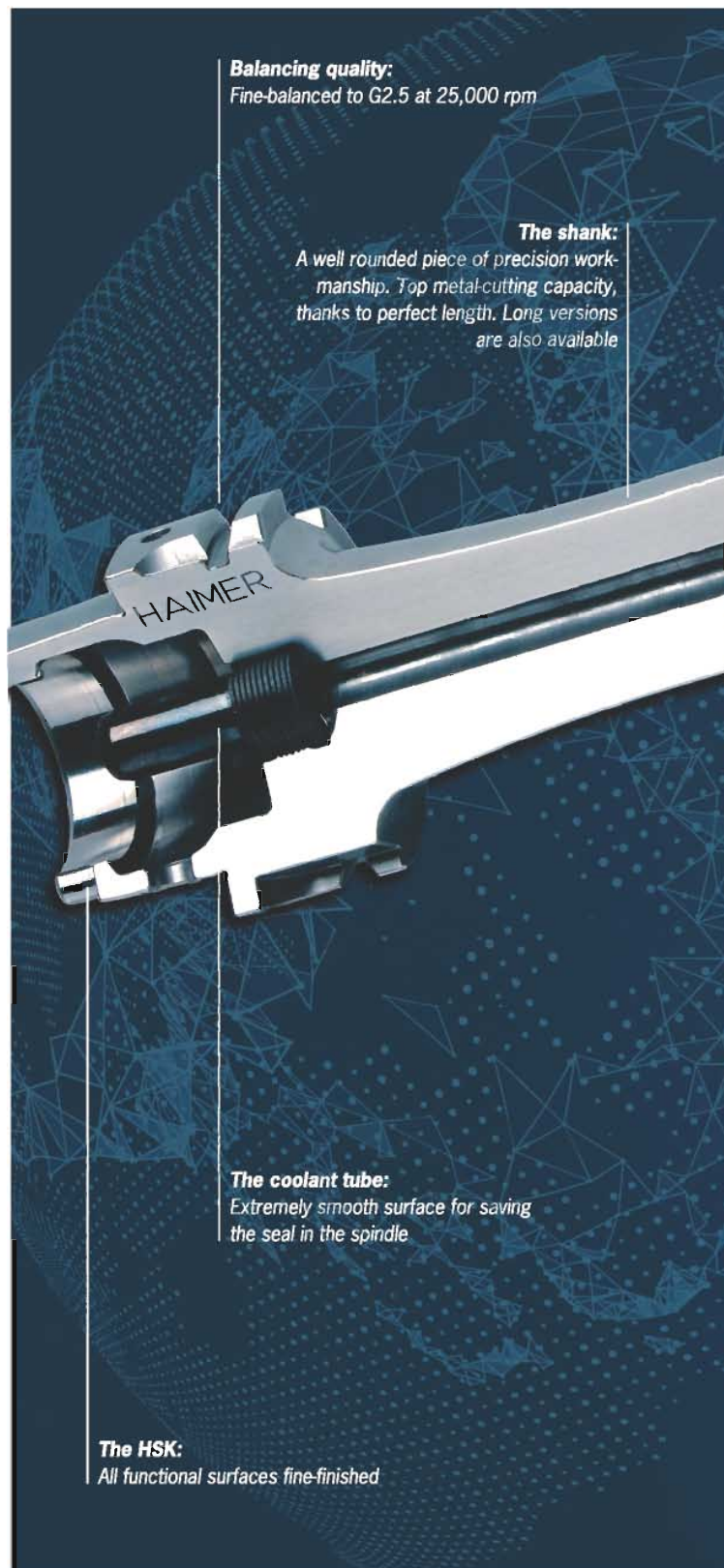
A well rounded piece of precision workmanship. Top metal-cutting capacity, thanks to perfect length. Long versions are also available

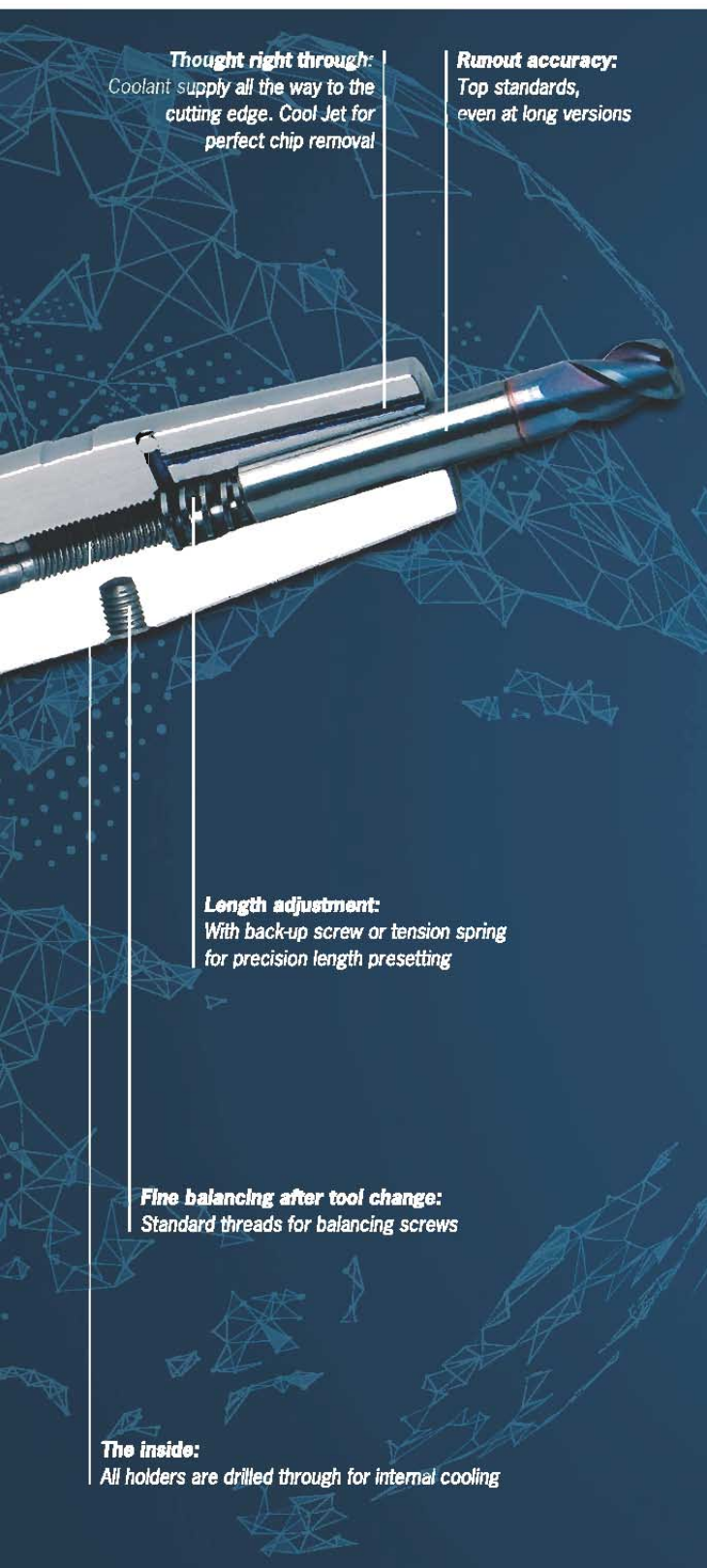
The coolant tube:

Extremely smooth surface for saving the seal in the spindle

The HSK:

All functional surfaces fine-finished





Are you saving costs at the right place?

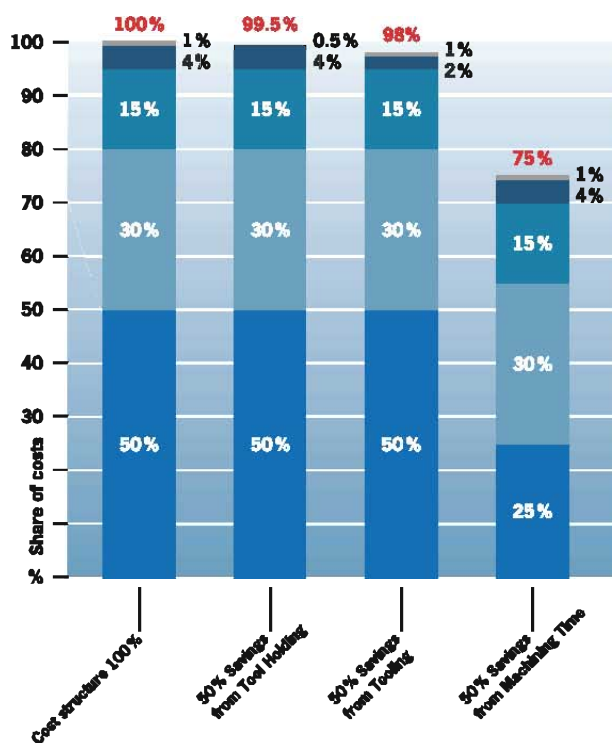
For machining efficiently, potential savings must be explored. But where are these potential savings?

Roughly, the costs of a work piece are composed of the following:

Machine costs with operator (machining time and idle time)	approx. 50 %
General costs	approx. 30 %
Raw material	approx. 15 %
Tooling	approx. 4 %
Tool holder	approx. 1 %

Assume you could save 50% on tool holders, tooling and machining time.

The resulting potential savings are as follows:



The result: The costs for tooling and tool holders are nearly meaningless. Even with savings of 50%, the total costs remain nearly the same.

Essential savings can be reached by minimizing the machining time. This potential only can be exploited when the cutting process is optimized and the productivity is increased.

Tool holders from HAIMER for more efficiency at high speed machining:

- Higher cutting capacity
- Extended tool life
- Shorter machining times
- High runout accuracy
- Better surface finish
- High reliability of the whole process

THE EVOLUTION OF SHRINK FIT TECHNOLOGY

The **Standard Shrink Fit Chuck** is suitable for a broad range of applications and, based on the needs of our customers with demanding machining challenges, HAIMER developed the **Power Shrink Chuck**.

Thus a much higher metal removal rate and significant tool life increase (e.g. at aluminum machining) could be achieved. With the Power Shrink Chucks, the area of applications for shrinking technology is extended to roughing (still with a runout accuracy of $< 0.00012''$ (0.003 mm) and vibration resistance due to optimized outer geometry).

The extremely rigid outer geometry and the reinforced wall thickness at the clamping bore make the **Heavy Duty Chuck** a profitable chuck for highest performances (e.g. for titanium machining) in the aerospace and heavy machining industry.

Power Shrink and Heavy Duty Shrink Chucks can be equipped with Safe-Lock from diam. $\frac{1}{4}''$ (6 mm) and with the cooling system Cool Flash from diam. $\frac{1}{4}''$ to $1''$ (6 mm to 25 mm) (optional).

**Standard
Shrink Fit Chuck**

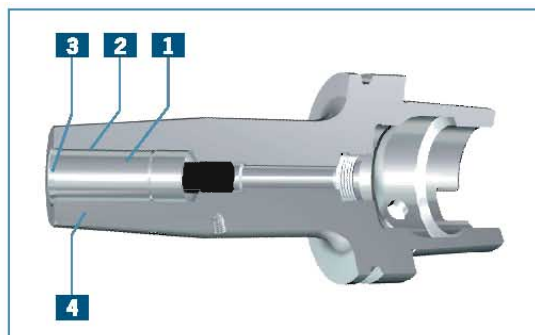
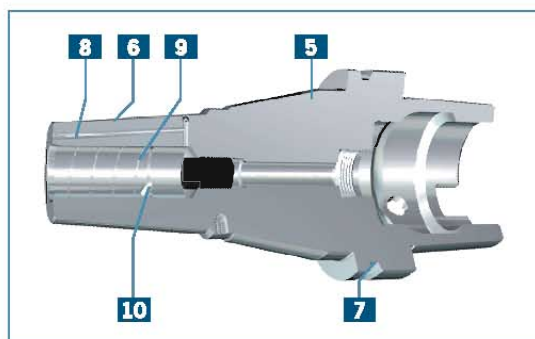
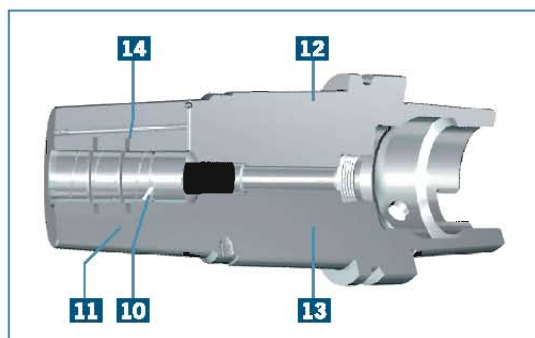


**Power
Shrink Chuck**



The most important features

- 1** High runout accuracy
- 2** Extreme clamping torque
- 3** Short chamfer
- 4** Cool Jet available upon request
- 5** Low tendency towards vibrations
- 6** Slim design at the top
- 7** Very rigid shank
- 8** Standard with Cool Jet, Cool Flash optional
- 9** Oil groove in the clamping bore
- 10** Mounting of Safe-Lock possible
- 11** Reinforced wall thickness
- 12** Extremely rigid outer geometry
- 13** High rigidity
- 14** Expansion grooves in the clamping bore

**Heavy Duty
Chuck****HAIMER Standard Shrink Fit Chuck****HAIMER Power Shrink Chuck****HAIMER Heavy Duty Chuck**

THE EVOLUTION OF COLLET CHUCK TECHNOLOGY

HAIMER has developed the existing technology of collet chucks further.

The Power Collet Chucks are collet chucks designed for high speed cutting (HSC) – an alternative to the reinforced shrink fit chucks of the Power Series. **Power Collet Chucks** offer a reinforced wall thickness and extra rigid outer contour and are therefore stable and resistant to vibrations. The chucks achieve maximum performance with even more precision with $< 0.00012''$ (0.003 mm) runout accuracy and higher metal removal rate when using the specifically developed HAIMER high-precision collets.

The Power Collets can optionally be equipped with Safe-Lock and Cool Jet.

With the **High Precision Collet Chuck**, a new standard has been set, especially for micro and fine machining. It is featured by the highest runout accuracy of less than $0.00012''$ (0.003 mm) providing the best surface finish at high rpm.

The specially coated locknuts (fine balanced to < 1 gmm) guarantee vibration dampening and noise-reducing features in high speed cutting (e.g. in the watchmaking or medical industry).

Standard
Collet Chuck

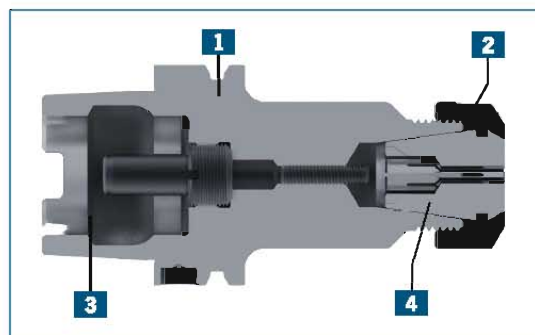


Power
Collet Chuck

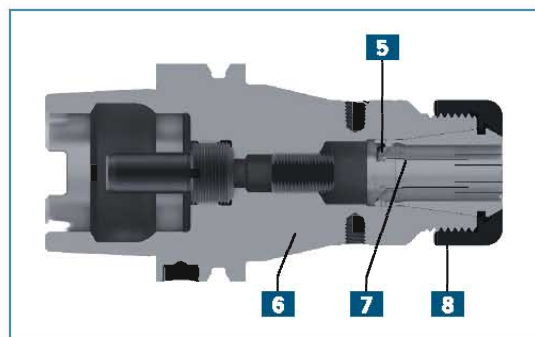


The most important features

- 1** Fine balanced to G2.5 at 25,000 rpm
- 2** Fine balanced clamping nut
- 3** All functional surfaces ground
- 4** High runout accuracy ($< 0.00012'' / 0.003 \text{ mm}$)
- 5** Safe-Lock in the high precision collet (optional)
- 6** Low tendency towards vibrations by a rigid shank
- 7** High precision collet
- 8** Fine balanced Power Collet clamping nut
- 9** High precision collet with Cool Jet bores (optional)
- 10** Chuck body fine balanced to G2.5 at 30,000 rpm or $U < 1 \text{ gmm}$
- 11** Thread for balancing screws
- 12** With specially coated locknut fine balanced $< 1 \text{ gmm}$

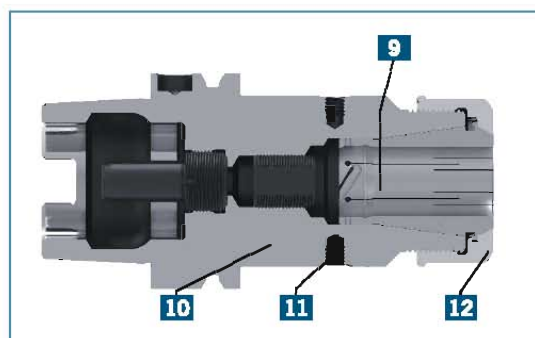


HAIMER Standard Collet Chuck



HAIMER Power Collet Chuck



















High Precision Collet Chuck



HAIMER High Precision Collet Chuck

OVERVIEW OF TOOL HOLDER TECHNOLOGY

Tool Holding Systems For Cylindrical Shank Cutting Tools






















Application Areas	Shrink Fit Technology					Mechanical
	Shrink Fit Chuck Standard	Power Shrink Chuck	Heavy Duty Shrink Chuck	Power Mini Shrink Chuck	Mini Shrink Chuck	ER Collet Chuck
						
Application		  	 	 	 	 
Drilling	•	•		•	•	•
Finishing	•	•		•	•	•
High Speed Cutting	•	•	•	•	•	
Roughing		•	•			
Clamping Range [mm]	3 - 32	6 - 32	16 - 50	3 - 16	3 - 12	0.5 - 25
Runout [mm] at 3xD	0.003 mm	0.003 mm	0.003 mm	0.003 mm	0.003 mm	0.02 mm
Max. RPM	up to 50,000	up to 50,000	up to 50,000	up to 80,000	up to 80,000	up to 15,000
Balancing Grade G	*2.5 @ 25,000 RPM	*2.5 @ 25,000 RPM	*2.5 @ 25,000 RPM	*2.5 @ 25,000 RPM	*2.5 @ 25,000 RPM	*2.5 @ 25,000 RPM
Outer Contour	slim	shank reinforced	clamping area and shank reinforced	very slim, shank reinforced	very slim	medium
Tool Changing Time	60 s	60 s	120 s	60 s	60 s	180 s
Pullout Protection	Safe-Lock	Safe-Lock	Safe-Lock			
Maintenance / Care	none / remove oil	none / remove oil	none / remove oil	none / remove oil	none / remove oil	check collet / cleaning

*HAIMER Standard • applicable • applicable to limited extent

HAIMER Tool Holder Program

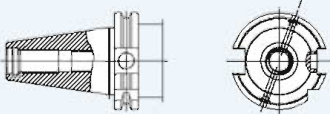
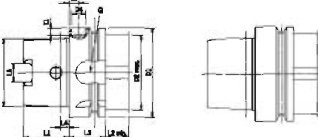
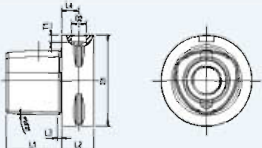
Program Diversity	CAT		CAT with Face Contact		BT			BT with Face Contact			SK			HSK												PSC			
	40	50	40	50	30	40	50	30	40	50	30	40	50	A32	A40	A50	A63	A63/80	A80	A100	A125	E25	E32	E40	E50		F43	F80M	A3
Shrink Fit Chuck Standard	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•			•	•	•	•	•	•	•
Power Shrink Chuck	•	•	•	•		•	•		•	•		•	•				•	•	•	•	•								•
Heavy Duty Shrink Chuck		•		•			•			•			•				•				•	•							
Power Mini Shrink Chuck	•				•	•		•	•			•	•				•	•											
Mini Shrink Chuck												•					•						•	•	•	•			
ER Collet Chuck	•	•			•	•	•					•	•	•	•	•	•		•	•		•	•	•	•	•	•	•	•
Power Collet Chuck	•	•			•	•	•					•	•	•	•	•	•	•	•	•	•	•	•	•	•				•
High Precision Collet Chuck			•	•	•	•	•	•	•	•		•	•	•	•	•	•			•			•	•	•				•
High-Precision Chuck						•	•					•					•			•									
Weldon Chuck						•	•					•	•	•	•	•	•		•	•					•				•
Whistle-Notch																	•			•									
Face Mill Arbor	•	•			•	•	•					•	•		•	•	•	•		•	•				•	•	•	•	•
Combi Shell Endmill Arbor						•	•								•	•	•			•									

Tool Holders

Power Collet Chuck	High Precision Collet Chuck	HG-Chuck	Weldon Chuck	Whistle-Notch	Hydraulic Chuck**	Milling Chuck**
						
  	 	 			 	  
•	•	•			•	
•	•	•			•	
•	•	•				
•	•	•	•	•		•
2 - 20	2 - 20	2 - 20	6 - 40	6 - 40	3 - 25	6 - 50
0.003 mm	0.003 mm	0.003 mm	0.03 mm	0.03 mm	0.003 mm	0.01 mm
up to 25,000	up to 40,000	up to 50,000	up to 15,000	up to 15,000	up to 40,000	up to 15,000
*2.5 @ 25,000 RPM	*2.5 @ 25,000 RPM	*2.5 @ 25,000 RPM	*2.5 @ 22,000 RPM	*6.3 @ 8,000 RPM	2.5 @ 25,000 RPM	partially fine balanced
shank reinforced	shank reinforced	medium	medium	medium	very massive	large interference contour
180 s	180 s	60 s	60 s	120 s	60 s	120 s
SafeLock	SafeLock		•	•		
check collet / cleaning	check collet / cleaning	check collet / cleaning	check clamping screw / remove oil	check clamping screw / remove oil	yearly membrane check / daily test for leaks	accurate and sensitive cleaning necessary

**not in the HAIMER delivery program

Interfaces

	Steep taper CAT. BT. SK	HSK-A/E	PSC Polygon Shank Coupling
Standard	ASME B5.50, JIS B6339, DIN ISO 7388-1	DIN 69893-1, DIN 69893-5	ISO 26623
Drawing			
Info	Traditional interface for milling spindles. Very robust. Also applicable for heavy duty machining. Clamping always with additional pull stud. Centering only via taper surface, without face contact. Therefore limited accuracy. For applications up to 12,000 rpm.	HSK-A: Standard for new machining centers. High precision centering and positioning by taper with face contact. Torque transmission by taper drive keys. For applications up to 35,000 rpm. HSK-E: No drive keys but symmetrical design. Mainly used for high speed machining.	Widespread at multitask (mill-turn centers) machines. Torque transmission and centering due to polygon taper. Exact positioning by face contact. Very high static stiffness.
Quality	HAIMER: 3,000 measuring points guarantee highest taper tolerance of AT3, i.e. all surface tolerances are within 1.5 µm (applies for SK40). HAIMER pull studs from highly precise in-house production made of impact-resistant steel are specially case hardened. For highest breakage and process security.	HAIMER: All functional surfaces at and in the taper (clamping shoulder, wings of drive keys, etc.) fine finished after hardening. For equal axial pull-in, highest runout accuracy and max. rigidity.	Complete ground inner taper for optimal clamping and centering accuracy.

TOOL HOLDERS ARTICLE NUMBER SYSTEM

Explanation article code

Example of article:

Taper size/Type of taper

40.

CAT40

Clamping system

84

Shrink fit chuck

40.

Taper size and type of taper

30	BT/SK
30P	BT with face contact
40	CAT/BT/SK
40P	CAT/BT with face contact
50	CAT/BT/SK
50P	CAT/BT with face contact
A32	HSK-A32
A40	HSK-A40
A50	HSK-A50
A63	HSK-A63
A63/80	HSK-A63/80
A80	HSK-A80
A10	HSK-A100
A125	HSK-A125
E25	HSK-E25
E32	HSK-E32
E40	HSK-E40
E50	HSK-E50
F63	HSK-F63
F80M	HSK-F80M
CC6	PSC 63

84

Clamping system – Key number

CAT	BT	SK	HSK	PSC 63	Clamping system
70	50	30	00	00	Weldon
72	52	32	02	02	ER Collet Chuck
33	53	33	03		Whistle Notch
74	54	34	04		Combination Shell Endmill Arbor
75	55	35	05	05	Face Mill Arbor
37	57	37	07		Quick Change Tapping Chuck
38	58	38	08		Adapter for Morse Taper with Tang
39	59	39	09		Blank Adapter
82	62	42	12		High-Precision Chuck
43	63	43	13		Adapter for Morse Taper with Thread
84	64	44	14	14	Shrink Fit Chuck
85	65	45	15		Shrink Fit Chuck Type S
88	48	47	17		Mini Shrink extra slim
48	68	48	18		Mini Shrink standard

Length	Size/Clamping diameter	Version
0.	1Z	.4
short	1"	with Cool Jet

	0.	1Z		.4
	Length	Size/Clamping diameter		Version
		INCH	METRIC	
0.	short	.1/8Z Ø 1/8"	.02 Ø 2 mm	.1 Telescope, without slits
1.	long	.3/16Z Ø 3/16"	.03 Ø 3 mm	.2 with Cool Jet
2.	oversize	.1/4Z Ø ¼"	.04 Ø 4 mm	.26 with Cool Flash
4.	ZG130 (130 mm long)	.5/16Z Ø 5/16"	.05 Ø 5 mm	.3 Power Chuck
5.	ultra short	.3/8Z Ø 3/8"	.06 Ø 6 mm	.36 Power Chuck with Cool Flash
6.	ZG200 (200 mm long)	.7/16Z Ø 7/16"	.07 Ø 7 mm	.37 Power Chuck with Safe-Lock
7.	ZG120 (120 mm long)	.1/2Z Ø ½"	.08 Ø 8 mm	.38 Power Chuck with Safe-Lock & Cool Flash
		.5/8Z Ø 5/8"	.10 Ø 10 mm	.3.HP High Precision Collet Chuck
		.9/16Z Ø 9/16"	.12 Ø 12 mm	.4 with Cool Jet bores that can be sealed
		.3/4Z Ø ¾"	.14 Ø 14 mm	.47 with Cool Jet and Safe-Lock
		.7/8Z Ø 7/8"	.16 Ø 16 mm	.6 Heavy Duty Chuck
		.1Z Ø 1"	.18 Ø 18 mm	.66 Heavy Duty Chuck with Cool Flash
		.1 1/4Z Ø 1 ¼"	.20 Ø 20 mm	.67 Heavy Duty Chuck with Safe-Lock
		.1 1/2Z Ø 1 ½"	.25 Ø 25 mm	.68 Heavy Duty Chuck with Safe-Lock & Cool Flash
		.2Z Ø 2"	.32 Ø 32 mm	.7 Safe-Lock
			.40 Ø 40 mm	.8 Power Mini Shrink
			.50 Ø 50 mm	.KKB with Coolant Exit bores

PERFECTION REQUIRES PRECISION

Tight tolerances and high quality demands leave no room for compromises. Where quality is concerned, we trust ourselves first and foremost. Not only do we manufacture all our products in-house, the fixtures and vices on our machines are also made by HAIMER. We do so because we know that only **Quality wins**.

**100 % Made in Germany**

- Constant high quality due to 100 % control in own factory
- Highest process reliability during machining

**Tool holders fine balanced
(G2.5 at 25,000 RPM)**

- Low vibration on spindle
- Better surfaces
- Maximum tool life
- Long lifetime of spindle

**Steep taper really AT3:
(1.5 µm shape tolerance)**

- Optimum connection between machine and tool
- Highest process reliability during fine machining
- Secure clamping during heavy milling

**High precision pull studs
made of special steel with
high toughness**

- No danger of breakage
- Highest security against accidents
- Precise tool clamping

**All functional surfaces
fine machined**

- Symmetric force transmission to clamping shoulder of HSK
- Precise drive slots on the HSK
- More accurate than DIN


HAIMER®
Quality Wins.

CERTIFICATE OF QUALITY