OVERVIEW OF TOOL HOLDER TECHNOLOGY

TOOL HOLDING EVETENC FOD EVENDDICAL CHANK CUTTING TOOLS

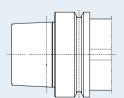
APPLICATION AREAS	SHRINK FIT TECHNOL	.OGY				MECHANICAL TOOL HOLDERS												
	Shrink Fit Chuck Standard	Power Shrink Chuck	Heavy Duty Shrink Chuck	Power Mini Shrink Chuck	Mini Shrink Chuck	ER Collet Chuck	Power Collet Chuck	High Precision Collet Chuck	HG-Chuck	Weldon Chuck	Whistle-Notch	Hydraulic Chuck 1)	Milling Chuck ²⁾					
					Haper F & Seo F D													
Application	og 😖	🕿 🗙 人	× 🗸	ďr	or r	ර් 🚘	o 🗙 🗡	o r	or r	ď	ď	° r	ペ × 人					
Drilling	•	•		•	•	•	•	•	•			•						
Finishing	•	•		•	•	•	•	•	•			•						
High Speed Cutting	O	•		•	•		•	•	Ð									
Roughing		•	•				•	•		•	•		•					
Clamping Range [mm]	3-32	6-32	16-50	3–16	3–12	0,5-25	2-20	2-20	2-20	6-40	6-40	3-32	6-50					
Runout [mm] at 3×D	0.003 mm	0.003 mm	0.003 mm	0.003 mm	0.003 mm	0.02 mm	0.003 mm	0.003 mm	0.003 mm	0.03 mm	0.03 mm	0.003 mm	0.01 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	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					
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	*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					
Outer Contour	slim	shank reinforced	clamping area and shank reinforced	very slim, shank reinforced	very slim	medium	shank reinforced	shank reinforced	medium	medium	medium	medium	large interference contour					
Tool Changing Time	60 s	60 s	120 s	60 s	60 s	180 s	180 s	180 s	60 s	60 s	120 s	60 s	120 s					
Pullout Protection	Safe-λock®	Safe-λock®	Safe-Aock®				Safe-λock®	Safe-λock®		•	•							
Maintenance/Care	none / remove oil	none / remove oil	none / remove oil	none / remove oil	none / remove oil	check collet / cleaning	check collet / cleaning	check collet / cleaning	check collet / cleaning	check clamping screw / remove oil	check clamping screw / remove oil	daily check for leaks and clamping force	accurate and sensitive cleaning necessary					

Program Diversity		SK		BT			BT with Face Contact				HSK												P
		40	50	30	40	50	30	40	50	A32	A40	A50	A63	A63/80	A80	A100	A125	E25	E32	E40	E50	F63 F	80M 6
Shrink Fit Chuck Standard	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•			•	•	•	•	•
Shrink Fit Chuck Standard extra slim		•	•										•										
Power Shrink Chuck		•	•		•	•		•					•	•	•	•	•						
Heavy Duty Shrink Chuck			•			•							•			•	•						
Power Mini Shrink Chuck		•	•	•	•		•	•					•	•									
Mini Shrink Chuck													•					•	•	•	•		
ER Collet Chuck		•	•	٠	•	•				•	•	•	•		•	•		•	•	•	•	•	•
Power Collet Chuck		•	•	•	•	٠	٠	٠	•	•	٠	٠	٠	٠	•	٠	•	•	•	•	•		
High Precision Collet Chuck		٠	•	•	•	•	٠	•	•	•	٠	٠	•			٠		•	•	•	•		
HG-Chuck		٠	•		•	•							•			٠							
Weldon Chuck		•	•		•	٠				•	٠	٠	٠		•	٠					•		
Whistle-Notch		•	•										٠			٠							
Face Mill Arbor		•	•	٠	•	٠					٠	٠	٠	٠		٠	•				•	•	
Combi Shell Endmill Arbor		٠	•		•	•					٠	٠	•			٠							
Hydraulic Chuck Standard		•	•	•	•	٠							٠			٠							
Power Hydraulic Chuck		•	٠	٠	•	•							•			•							

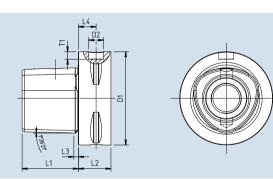
INTERFACES Steep taper SK, BT, CAT HSK-A/E/F Steep taper with Face Contact SK, BT, CAT DIN 69893-1, DIN 69893-5 Standard DIN ISO 7388-1, JIS B6339, ASME B5.50 Drawing Info **Steep taper:** Traditional interface for milling spindles. HSK-A: Standard for new machining centers. High Very robust. Also applicable for heavy duty machining. precision centering and positioning by taper with face Clamping always with additional pull stud. Centering only contact. Torque transmission by taper drive keys. For via taper surface, without face contact. Therefore limited applications up to 35,000 rpm. accuracy. For applications up to 12,000 rpm. **HSK-E:** No drive keys but symmetrical design. Mainly used for high speed machining. Steep taper with Face Contact: Face contact for increased accuracy in Z axis and higher rigidity in **HSK-F:** Like HSK-E but with bigger flange diameter for roughing operations due to direct contact between higher speeds and feeds. spindle and holder. Quality HAIMER: 3,000 measuring points guarantee highest HAIMER: All functional surfaces at and in the taper taper tolerance of AT3, i. e. all surface tolerances are (clamping shoulder, wings of drive keys etc.) fine within 1.5 μ m (applies for SK 40). finished after hardening. HAIMER pull studs from highly precise in-house For equal axial pull-in, highest runout accuracy and production made of impact-resistant steel are specially max. rigidity. case hardened, for highest breakage and process security.



PSC Polygon Shank Coupling



ISO 26623-1



Widespread at multitask (mill-turn centers) machines. Torque transmission and centering due to polygon taper. Exact positioning by face contact. Very high static stiffness.

Complete ground inner taper for optimal clamping and centering accuracy.

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