

VADZA

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Superior Clamping and Gripping

SCHUNK 

T|E|N|D|O  *Aviation*

100% Safety in
High-performance milling.

**For your Standard
Weldon Tools.**

TENDO Aviation.

Developed for the aviation industry, suitable for all industries with the highest demands.

SCHUNK toolholders such as the TENDO hydro expansion toolholder already stand for maximum process reliability and efficiency. Now we are taking it a step further in order to meet the demands on a mechanical tool locking device under the most extreme machining conditions in the aviation industry with TENDO Aviation, the SCHUNK toolholder with an anti-pull-out locking mechanism that can withstand any demanding machining process.

Safe means safe means safe.

A secure hold of the tool guarantees faultless surface machining, improved cost efficiency, and reliable machining. Tendo Aviation offers you safety in three ways.

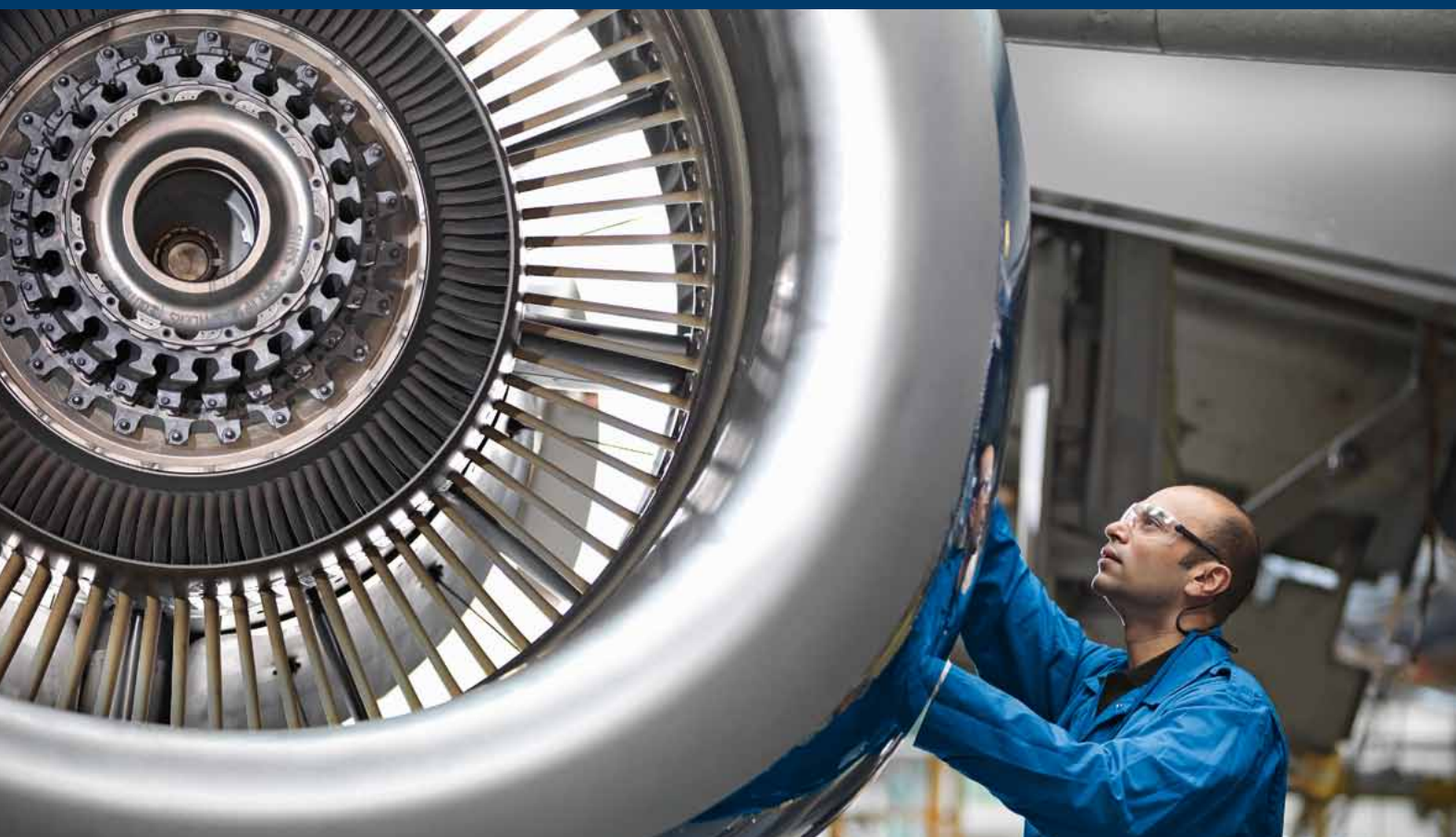
Safe, because each tool is seated in the mounting with absolute stability, and thereby achieves maximum performance in material machining.

Safe, because the new TENDO Aviation can be used for any tool with a standard Weldon shank surface. The tool change is extremely easy and does not require any machining of the tool shaft.

Safe, because TENDO Aviation has the proven SCHUNK quality, with which you can enjoy full investment security and count on first-class service.

Always ready for use,
because tools with a standard
Weldon shank are used without
reworking.





Inspired by Aviation – designed for a wide Range of Applications.

TENDO Aviation was developed for the highest technical demands on hold and precision for tools with standard Weldon shafts. The most innovative anti-pull-out locking mechanism currently on the market is thus perfectly suited for the aviation industry, as well as all sectors looking for their efficiency to soar to new levels.

Aviation industry

Production of turbine blades, turbine blisks, housing frames, control elements, etc.

Automotive industry

Production of turbochargers, turbocharger housings, impellers and steering wheels, individual parts for racing, injection nozzles, etc.

Metalworking industry

Machining of titanium alloys, nickel-based alloys, etc.

TENDO Aviation.

Increase precision and efficiency!

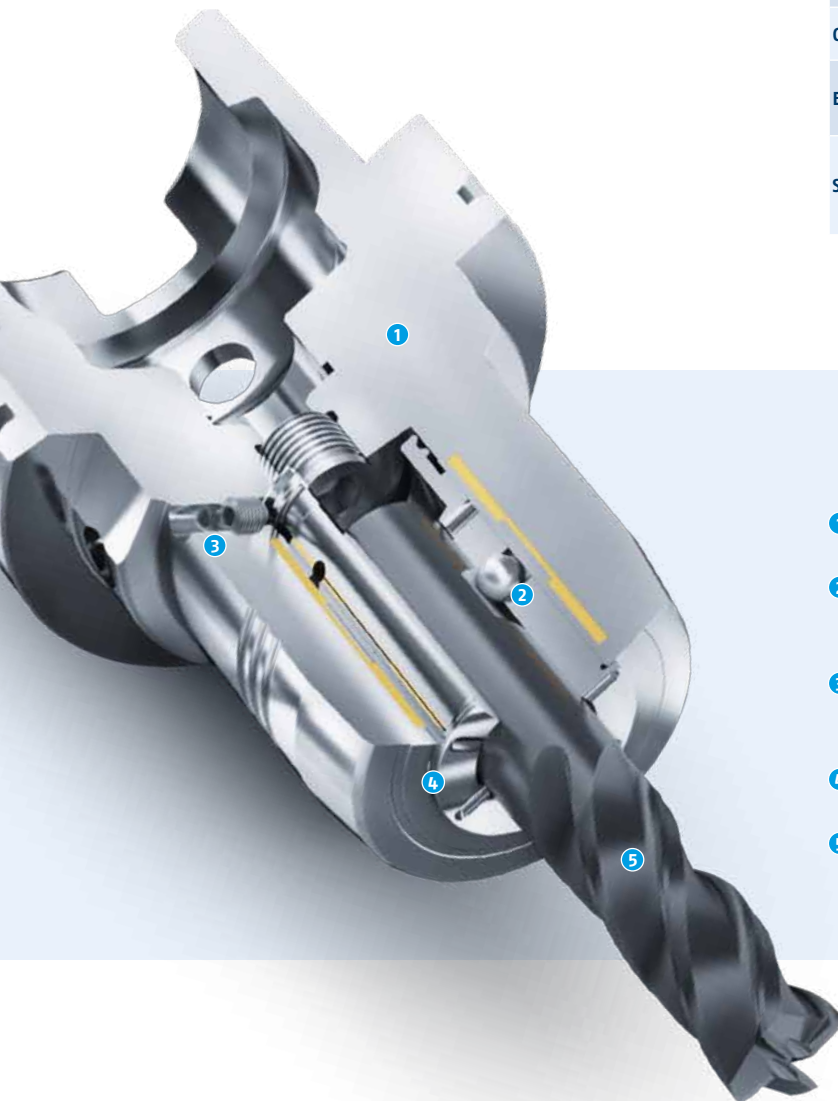
TENDO Aviation assures form-fitting, safe clamping of all tools with a standard Weldon shank. So you can use your machines and tools with maximum efficiency and minimal material wear. Your advantage: increased reliability and the best efficiency.

Your advantages:

- No reworking of the tool required
- "Ready for use", easy set-up of your production lines
- No maintenance costs
- Quickly "ready for use" and universally applicable
- Lower tool costs with the use of standard Weldon tools
- Immediately available from the SCHUNK standard product range

Our performance promises. You benefits.

Safe	Form-fitting, safe clamping of the tool
Universal	No reworking on the tool shaft. Immediate use of the tool with standard Weldon shank
Precise	The anti-pull-out locking mechanism assures the best shapes and tolerances on the workpiece and a reliable machining process
Perfect	Excellent workpiece surfaces, because micro-cracks on the blades are prevented
Efficient	Cutting data of the machine and tools can be fully used, because the force-fit clamping is also form-fitting and thus reliable
Continuous	The highest run-out and repeat accuracy
Easy to use	Easy clamping without periphery device, anytime and anywhere
Sustainable	The vibration damping of the toolholder extends the service life of tools and machine spindles and minimizes accruing purchase costs



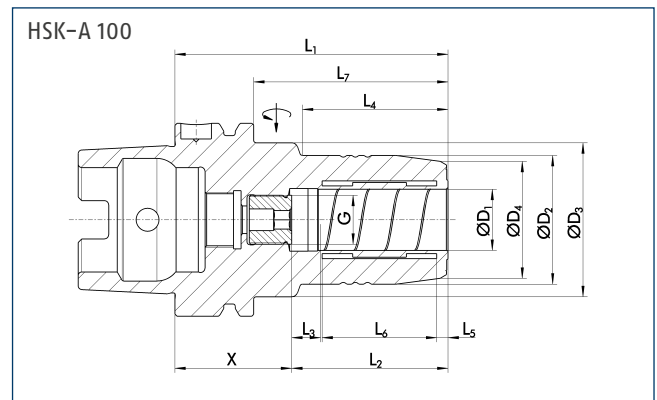
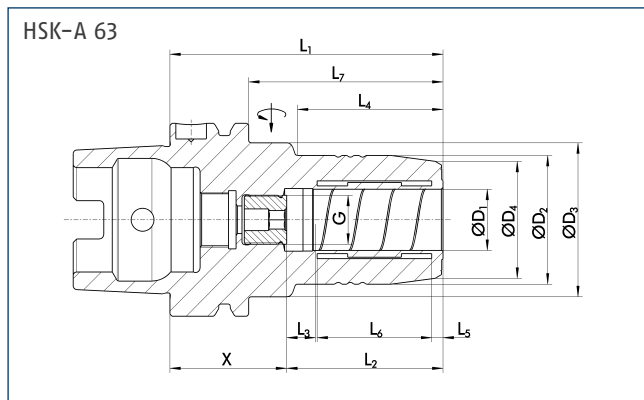
Sectional diagram

- 1 TENDO Aviation hydro expansion toolholder
- 2 Locking ball for mechanically securing the end milling cutter
- 3 Adjusting screw for mechanically securing the intermediate sleeve
- 4 Intermediate sleeve with hole for locking ball
- 5 Standard end milling cutter with Weldon drive surface

Technical data

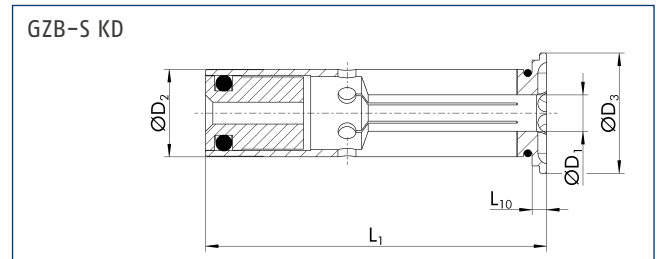
TENDO Aviation

Mounting	D ₁ [mm]	ID	D ₂ [mm]	D ₃ [mm]	D ₄ [mm]	X	L ₁ [mm]	L ₂ [mm]	L ₃ [mm]	L ₄ [mm]	L ₅ [mm]	L ₆ [mm]	L ₇ [mm]	G	M _{min} [Nm]	m [kg]
HSK-A 63	20	02040565	42.0	50.0	38.0	39.0	90.0	51.0	10.0	48.0	3.7	37.8	64.0	M16x1	330.0	2.2
HSK-A 100	32	02040685	64.0	75.0	60.0	49.0	110.0	61.0	10.0	62.0	4.2	47.7	81.0	M16x1	650.0	3.8



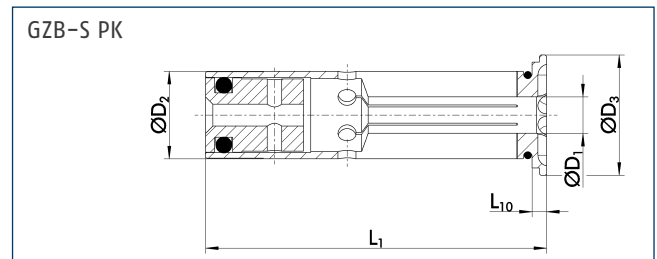
Intermediate sleeves GZB-S KD (coolant proof)

Designation	ID	D ₁ [mm]	D ₂ [mm]	D ₃ [mm]	L ₁ [mm]	L ₆ [mm]	m [kg]
GZB-S 20-8 KD	02079255	8.0	20.0	24.0	50.5	2.0	0.1
GZB-S 20-10 KD	02079275	10.0	20.0	24.0	50.5	2.0	0.1
GZB-S 20-12 KD	02079295	12.0	20.0	24.0	50.5	2.0	0.1
GZB-S 20-16 KD	02079335	16.0	20.0	24.0	50.5	2.0	0.1
GZB-S 32-16 KD	02079455	16.0	32.0	35.5	60.5	2.0	0.3
GZB-S 32-20 KD	02079475	20.0	32.0	35.5	60.5	2.0	0.3
GZB-S 32-25 KD	02079485	25.0	32.0	35.5	60.5	2.0	0.3



Intermediate sleeves GZB-S PK (periphery cooling)

Designation	ID	D ₁ [mm]	D ₂ [mm]	D ₃ [mm]	L ₁ [mm]	L ₆ [mm]	m [kg]
GZB-S 20-8 PK	02179255	8.0	20.0	24.0	50.5	2.0	0.1
GZB-S 20-10 PK	02179275	10.0	20.0	24.0	50.5	2.0	0.1
GZB-S 20-12 PK	02179295	12.0	20.0	24.0	50.5	2.0	0.1
GZB-S 20-16 PK	02179335	16.0	20.0	24.0	50.5	2.0	0.1
GZB-S 32-16 PK	02179455	16.0	32.0	35.5	60.5	2.0	0.3
GZB-S 32-20 PK	02179475	20.0	32.0	35.5	60.5	2.0	0.3
GZB-S 32-25 PK	02179485	25.0	32.0	35.5	60.5	2.0	0.3



TENDO Aviation.

When we promise 100%, we mean 100%.

Many sectors operate under high pressure to innovate and must assure efficiency and the highest quality in the process. New materials and new technology demand technical solutions that are ideally equipped to meet these challenges.

As your reliable development partner, we understand these challenges and are able to perfect your machining processes with innovative solutions in toolholding.

The quality you expect: TENDO hydro expansion technology

- High quality milling cutters, drills, and reamers are securely clamped in TENDO
- Cross-sector solution for all applications in general machine building. Ideal for precise workpieces with tight tolerance.

Plus the highest safety: TENDO Aviation

It's there whenever ...

- ... high demands are made on workpieces
- ... safe processes are implemented
- ... tool costs must be reduced

In the aerospace industry and the automotive industry.
Reliable clamping – no tool pull-out

Maximum flexibility: Intelligent clamping systems from SCHUNK

For pneumatic, hydraulic, mechanical, magnetic or vacuum applications: Our comprehensive product range guarantees you the highest flexibility in solving your clamping tasks.

- Micron-precise connection between the machine table and the workpiece
- 5-sided machining in a single clamping set-up
- More than 500 combinations in the SCHUNK modular system



J. Lehmann

Jens Lehmann,
German goalkeeper legend,
brand ambassador of SCHUNK,
the family-owned company,
since 2012



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