

UTS-x (Ultra-precise HSK-E tool holder)



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Levicron

The development, manufacturing, and sales of motor spindle solutions with non-contact bearing technologies for ultra-precision and CNC machining are Levicron's core businesses.

At Levicron, bespoke proven analytical methods and simulation tools for structural analysis and fluid dynamics complement sound practical experience of spindle development and production. Together with the first-ever aerostatic tool spindle comprising an industrial taper interface (HSK) and full CNC functionality, products from Levicron are now used for CNC-machine precision parts with optical surface finish all around the world.

Our requirements for our products and those of our customers prevent the use of off-the-shelf components. Therefore, not only the patented bearing technology and patent-pending spring-free HSK taper clamping systems can be found in our motor spindles, but also in-house developed motor, encoder and tool clamping solutions.

A vertical manufacturing integration of more than 90 % incorporates CNC turning, -milling, -diamond machining, -cylindrical/ bore grinding, -wire cut EDM, and bespoke machining solutions. You can find all our sophisticated production tests and dynamic balancing methods under one roof.

The quality, speed, and accuracy of Levicron spindles and the requirements coming from the applications are used to make it necessary to develop bespoke encoder and motor solutions as well as solutions for HSK tool clamping, HSK tool holding, and others. Because of their unique performance and functionality, some solutions have been made available for our customers as off-the-shelf items.

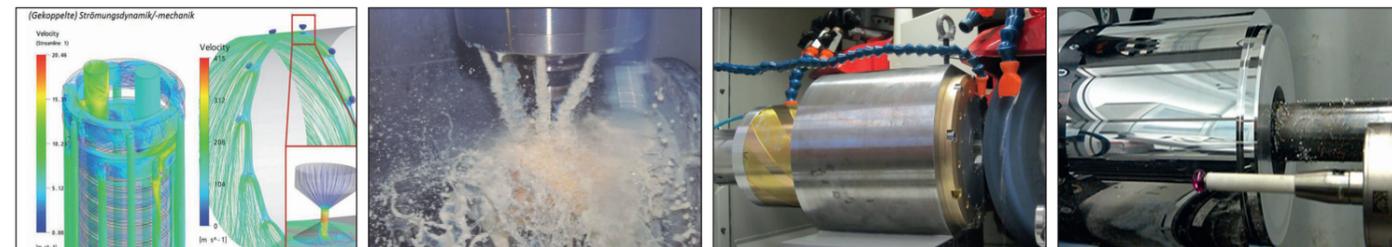
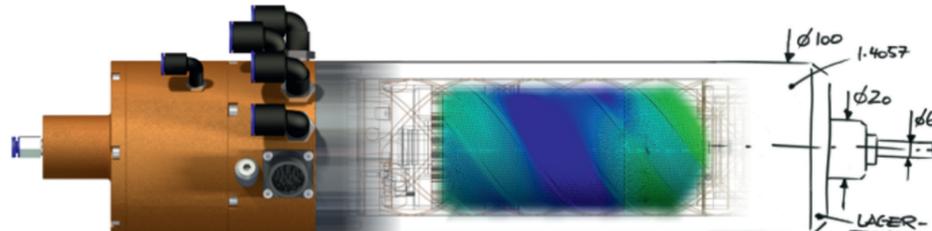
Although Levicron had to reinvent the wheel more than once, our customers can confirm that our wheels run smoother and faster than others. As a result, tool and work-holding spindle solutions for turning, milling, and grinding can provide the customer with unique thermal stability and robustness at shaft dynamics, errors in shaft motion, and speeds that have not been available so far.



UTS-x
Tool holder series UTS-25, HSK-E25, DIN 69893

Levicron

All in house developed and manufactured Ultra Precision Technology for CNC Machining



UTS-x

Ultra-precise tool holders with HSK-E interface and thermal tool shank clamping.

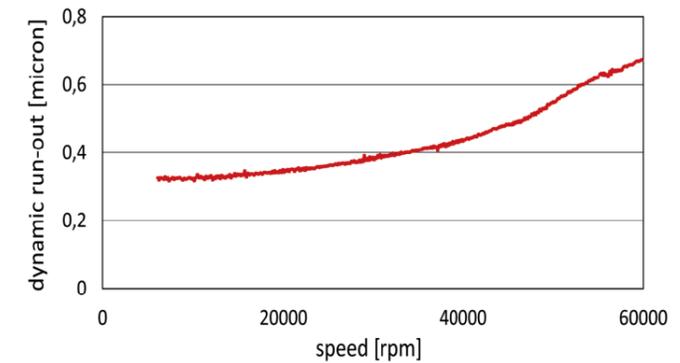
Description

The best machine and the most precise tool spindle offer no advantage without equally precise and dynamically neutral tool clamping. To fully exploit the potential of ultra-precise tool spindles with HSK interface, there are therefore also increased demands on the tool holders used, which currently available solutions by DIN 69893 can inadequately meet. Complementing the highly specialized shafting that Levicron uses extensively for its spindle solutions, the **UTS-x tool** holder series can now be offered as a supplement to the existing motor spindles with a matching HSK interface. It also provides added value to the previous innovative, dynamic balancing processes and meets the requirements of ultra-precision machining for the first time.

Levicron's **UTS-x** tool holder series with HSK interface according to DIN 60893 thus offers the following unique features in combination with the tool spindles (when using Levicron's ASD-H25/A, UASD-H25/A, and UASD-H40 tool spindles):

- ➔ **Tool clamping:** Thermal shrinking
- ➔ **Static tool run-out:** < 0,8 μm
- ➔ **Balancing quality:** $G \leq 0,3$ mm/s, 60,000 rpm
- ➔ **Repeatability, radial/ axial:** < 0.2 μm

While the tool runout is reduced by 70% compared to the industry standard, the respective balancing grades are 25 times better.



Data Sheet UTS-x

Order number	Taper X	d1 (for h5), mm	d2, mm	d3, mm	L, mm	l, mm
UTS-25 (HSK-E25)						
901.857 *)	HSK-E25, DIN 69893	8	15	22	55	45
901.6A0 *)	HSK-E25, DIN 69893	6	12.5	18.6	80	34.5
901.655	HSK-E25, DIN 69893	6	12.5	18.6	55	34.5
901.4A0 *)	HSK-E25, DIN 69893	4	10	15.2	80	30
901.444	HSK-E25, DIN 69893	4	10	15.2	50	30
901.233	HSK-E25, DIN 69893	3	9	13.5	45	26
901.755	HSK-E25, DIN 69893	1/4" (6.375)	12.5	18.6	55	34.5
901.333	HSK-E25, DIN 69893	1,8" (3.175)	9	13.5	45	26
UTS-32 (HSK-E32)						
902.230	HSK-E32, DIN 69893	3	7.7	11.2	45	12
902.440	HSK-E32, DIN 69893	4	10.2	14.4	50	18
902.4A0 *)	HSK-E32, DIN 69893	4	10.2	17	80	18
901-650	HSK-E32, DIN 69893	6	15.2	19.4	55	25
902.880 *)	HSK-E32, DIN 69893	8	20	25	80	34
UTS-40 (HSK-E40)						
903.8A6	HSK-E40, DIN 69893	8	12.5	18.6	80	34.5
903.655	HSK-E40, DIN 69893	6	10	15.2	55	30
903.444	HSK-E40, DIN 69893	4	9	13.5	45	26

*) special design, only on request