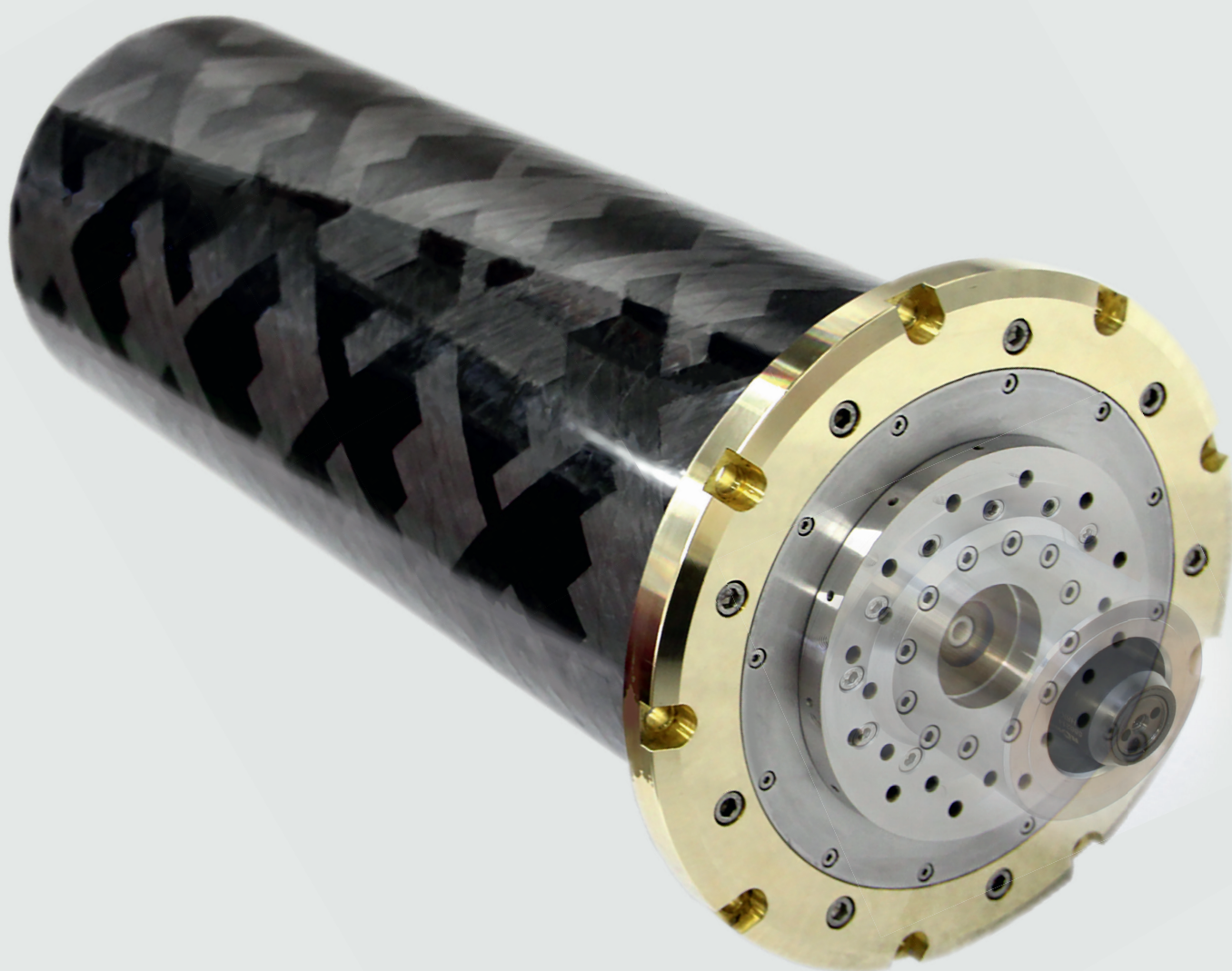


Innovative manufacturer of ultra-precise tool and workpiece motor spindles for milling, grinding, drilling and turning applications.



LEVICRON
NON-CONTACT PRECISION MOTION

Ultra-precise aerostatic Workpiece spindle: **ASD-Px/ ASD-PH63M (HSK-C 63)**



Levicron GmbH



ASD-Px (with HSK-C 63 option)

Ultra-precise aerostatic workpiece spindle for turning, fly cutting and positioning



General information at a glance

Work-holding interface	Ground faceplate, Ø 120 mm
Housing diameter	Ø 175 mm
Available speeds	0 - 10.000 rpm (option: 12.000 rpm) *)
Housing options	1. Carbon fibre sleeve
	2. Flanged steel housing
	3. Steel horizontal mount
Workpiece clamping/ fixture options **)	4. Zero point chuck (Erowa ER-047777)
	5. Vacuum disk with pin (Ø 150/ 200 mm)
	6. Vacuum chuck (Ø 150/ 200 mm)
	7. HSK-C 63 (function of a tool motor spindle)
Motor	Permanent magnet synchronous, 6-poles, 3 phases
Constant motor torque, High performance option (CNC)	13.5 Nm
Constant motor torque, Iron-less option (Ultraprecision)	6.5 Nm
Bearing system	Aerostatic (ASD-Px), 6-10 bar ***)
Rotary encoder	Axis operation: 11,840 Lines optical 1 VSS SinCos with zero flag
	Alternatives, absolute: BiSS-C, FANUC, Mitsubishi-2/4, DRIVE-CLiQ
	Spindle operation: 253 Lines GMR 1VSS SinCos with zero flag
Medium feedthrough ****)	Vacuum, compressed air, oil air (option: for cutting fluid, max. 80 bar)

*) other speeds on request; **) individual connection after consultation

) High-pressure aerostatic (20-30 bar) on request; other medium feedthrough on request *)

Values of: May 2024

About

Our ultra-precise, load-bearing **ASD-Px** workpiece spindle is used to hold, position, and/or rotate workpieces during machining, typically in turning, milling, and grinding machines. It combines the highest precision with a rotational accuracy (error motion) of less than 15 nm and market-leading spindle stiffness and load capacities in its class. The symmetrical design and efficient thin-film liquid cooling not only keep shaft growth below 1 µm and warm-up time under 8 minutes, but also ensure high performance and reliability. In addition, it is equipped with a unique synchronous motor technology with air gap winding.

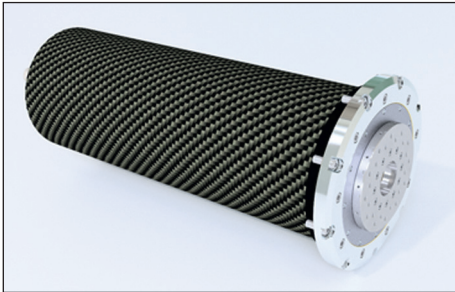
The **ASD-Px** offers a comprehensive spindle solution for workpiece rotation and positioning in ultra-precise machining. It is suitable for machining large workpieces at low speeds and small workpieces at high speeds. It also enables precise orientation in axis positioning mode.

The chuck interface of the **ASD-Px** consists of a precision-ground faceplate with a diameter of 120 mm and a standardized bolt circle pattern. Customer-specific and commercially available rotary workpiece clamping devices can be attached to this interface.

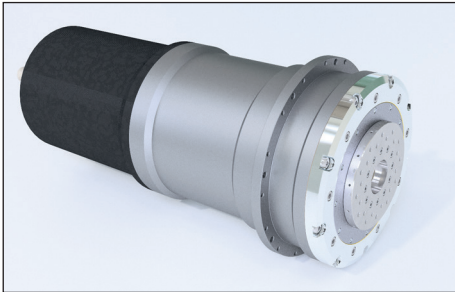
The following is an overview of all options:

Housing options

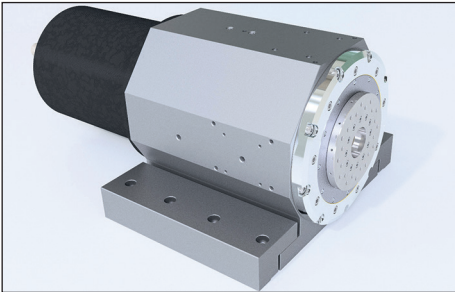
1. Carbon fibre sleeve



2. Flanged steel housing

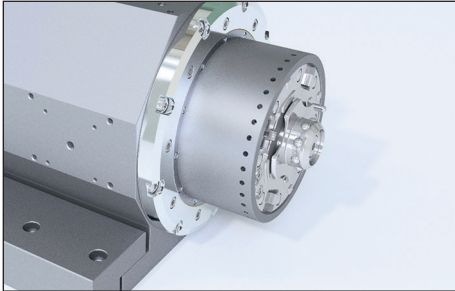


3. Steel horizontal mount

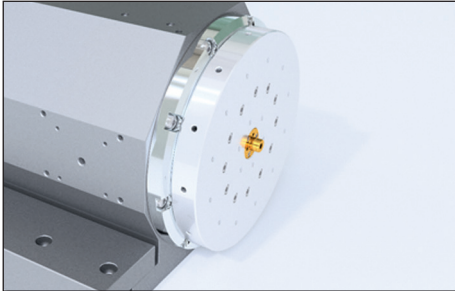


Workpiece clamping/ fixture options

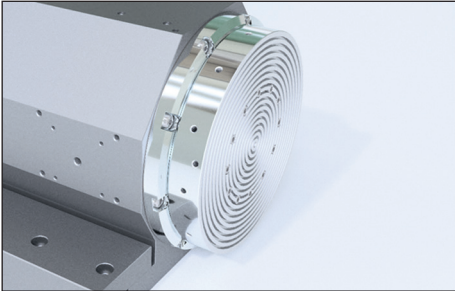
4. Zero point chuck



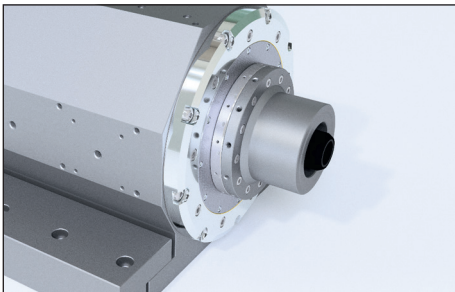
5. Vacuum disk with pin



6. Vacuum chuck



7. HSK-C 63



ASD-Px as tool spindle: **ASD-PH63M**

One possible clamping option for our ASD-Px is a manual HSK-C 63 interface, which turns our workpiece spindle into a tool spindle and acts as a grinding spindle, especially for producing glass lenses. It is named our **ASD-PH63M**. With a high-performance motor option with a constant torque of 13.5 Nm and high rotational fidelity, the spindle is even better suited for this purpose.

When in use, the **ASD-PH63M** spindle significantly reduces the so-called 'sub-surface' damage to the substrate that typically occurs during the grinding process and the subsequent polishing time. The slim cartridge design, a testament to the versatility of our product, allows for use in horizontal and vertical machining centers with a closed headstock.

ASD-Px/ ASD-PH63M at a glance

Speeds: 0 - 10,000 rpm (12,000 rpm optional)
Radial load capacity: > 1,800 N
Axial load capacity: > 2,200 N
Radial stiffness: > 180 N/ μ m
Axial stiffness: > 230 N/ μ m
Motor type: Permanentmagnet-Synchron
Motor torque: 6,5 Nm (S1, 100%) (16 Nm optional)
Positioning accuracy: < 5 "
Shaft error in motion: < 15 nm

at 6 bar supply pressure

500 mm

Ø 175 mm

Ø 214,5 mm

Housing options

- Carbon fiber housing
- Steel housing with flange
- Horizontale Stahlhalterung

Patentierte
Lagertechnologie

Clamping options:

- Zero point chuck
- Vacuum disk
- Vacuum chuck
- **HSK-C 63 (manually)**

High-resolution optical 1 VSS encoder with
11,840 line count or 26-bit absolute encoder
with BISS-C, DRIVE-CLiQ, Panasonic protocol

1 VSS GMR encoder with line count 253

Dynamically optimized synchronous drive with air
gap winding and 6.5 Nm torque (S1), optionally with
slotted stator and 14 Nm (S1)

Vacuum and compressed air rotary feedthrough
(Internal tool cooling with HSK-63 option)

Highly effective thin-film liquid cooling

Cartridge design for closed headstocks, optionally with
water-cooled spindle block for mounting



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