

Step-Tec
Switzerland

Step-Tec

Milling-, Mill-turning-, Grinding spindles



Becoming better every day – since 1802

GF Machining Solutions

When all you need is everything, it's good to know that there is one company that you can count on to deliver complete solutions and services. From unmatched Electrical Discharge Machining (EDM), Laser texturing, Laser micromachining, Additive Manufacturing and first-class Milling and Spindles to Tooling and Automation, all of our solutions are backed by unrivaled Customer Services and expert GF Machining Solutions training. Our AgieCharmilles, Microlution, Mikron Mill, Liechti, Step-Tec and System 3R technologies help you raise your game—and our digital business solutions for intelligent manufacturing, offering embedded expertise and optimized production processes across all industries, increase your competitive edge.



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Step-Tec: Always a step ahead

In today's difficult worldwide markets, manufacturers can struggle to balance sales increases, productivity, quality and cost savings. To stay competitive, machine tool builders need innovation. Step-Tec provides the industry's leading portfolio of high-frequency motor spindles for milling, mill-turning and grinding, with designs that improve machine tool performance and application quality while they reduce the cost of integration.

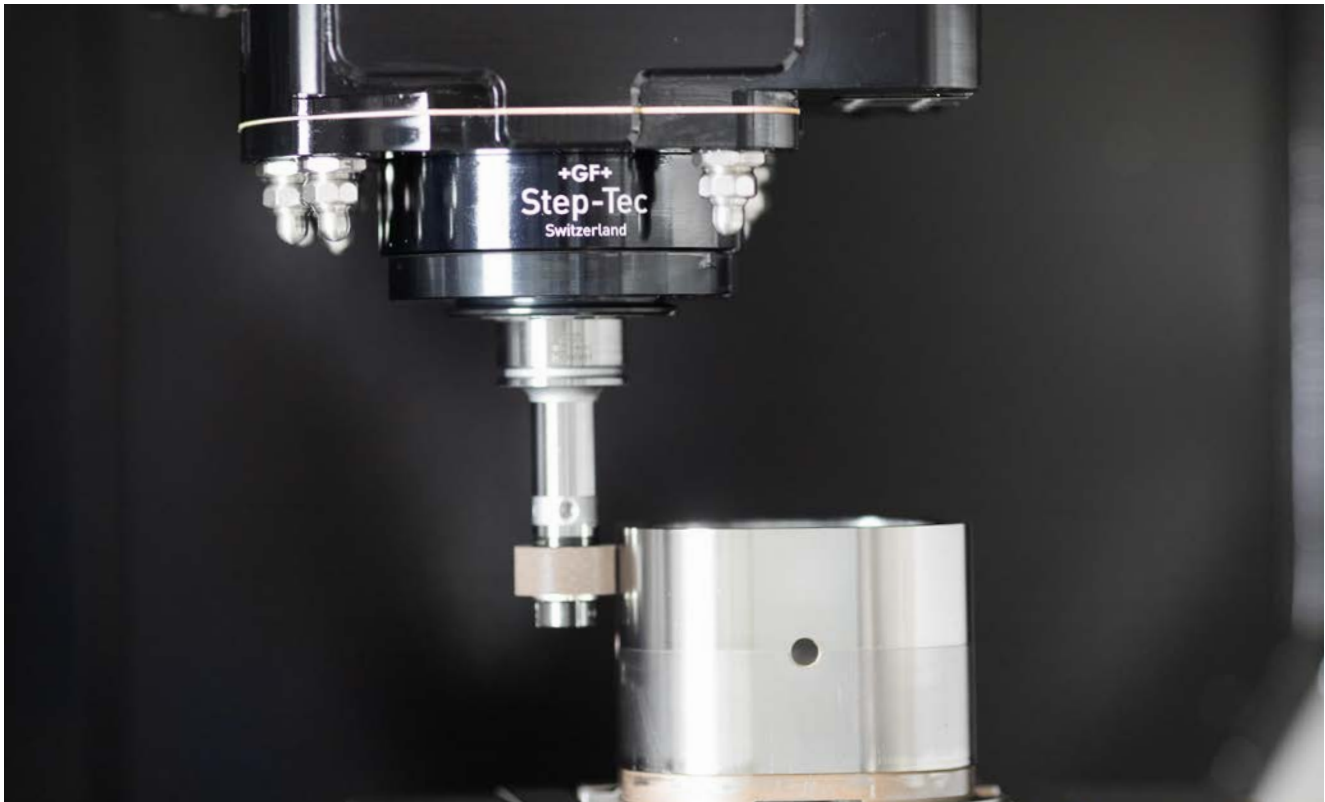
We are here to understand and deliver for any milling, mill-turning or grinding application. Our range of motor spindles,

solutions and services matches your unique requirements to keep you ahead of your competition. Since 1995, we have supported your demand for outstanding productivity, quality and availability.

That's why we continue developing extremely durable products despite of the highly cost-sensitive environment. Our comprehensive range of standard and customized products represents our intense investment in the latest technologies, including data management, electronics and high-precision mechanics.

Segments and applications

Your experience – our solutions



Industries	HVC 120	HVC 140	HVC 150	HPC 150	HPC 190	HPC 240	HPC 290
ICT	+	+	+				
Medtech	+	+	+	+	+		
Aerospace					+	+	+
Precision machining	+	+	+	+	+		
Packaging		+	+		+		
Automotive		+	+	+	+	+	
Machinery			+	+	+	+	+
Transportation				+	+	+	+
Application							
Milling	+	+	+	+	+	+	+
Grinding	+	+	+	+	+	+	
Mill turning					+	+	+

Tool interface	HVC 120	HVC 140	HVC 150	HPC 150	HPC 190	HPC 240	HPC 290
HSK E25/E32	+						
ISO (SK) 40				+	+	+	
ISO (SK) 50						+	+
HSK E40/C40		+	+				
HSK E50/C50/F63			+	+			
HSK A63/C63/T63/F80			+	+	+	+	
HSK A80/T80					+	+	+
HSK A100/T100						+	+
Cooling							
O	+	+	+	+	+	+	+
H ₂ O	+	+	+	+	+	+	+
Oil	+	+	+	+	+	+	+
CO ₂		+			+		
MQL	+	+	+	+	+	+	+

Step-Tec offers the best solutions

+ The ideal platform

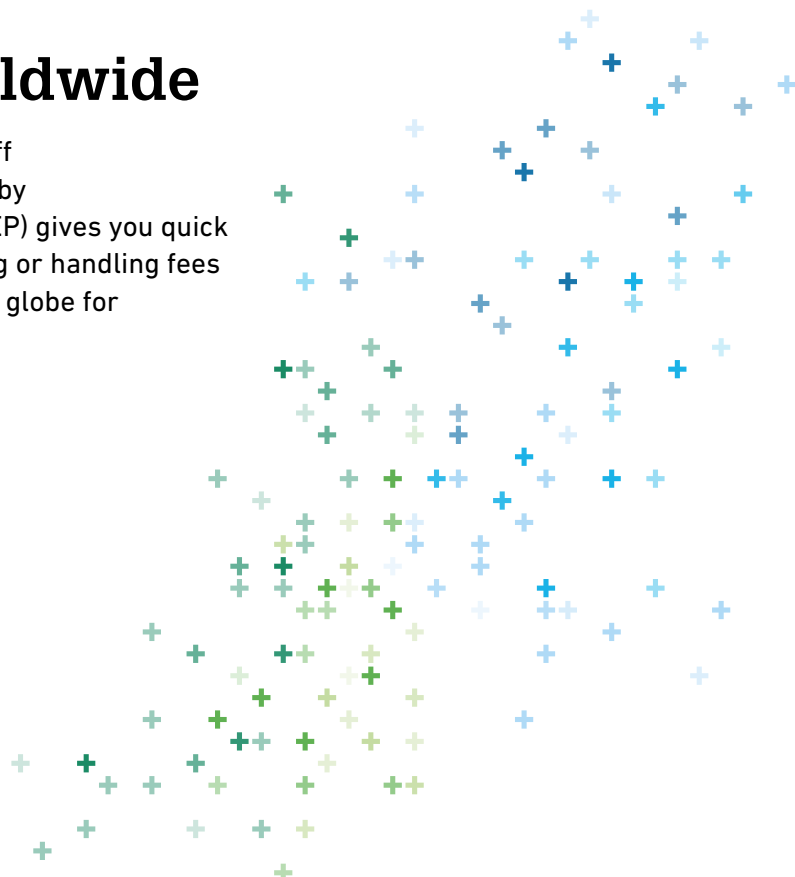
- Unbeatable power-to-weight ratio
- Highest precision and long-term thermal stability
- Embedded equipment and process monitoring solutions
- Data logging and communication module
- Renowned durability and exceptional longevity for lowest total cost of ownership (TCO)

+ The right engineering partner

- More than two decades of high-end motor spindle development
- In-house engineering, design, research, development and testing
- Wide range of approved standard solutions provides the foundation for customized options
- Applying the latest development and simulation software to achieve unbeatable results through failure mode and effects analysis (FMEA), computer-aided engineering (CAE), computational fluid dynamics (CFD) and vibration analysis
- In-house manufacturing of high-precision key elements

+ The best service worldwide

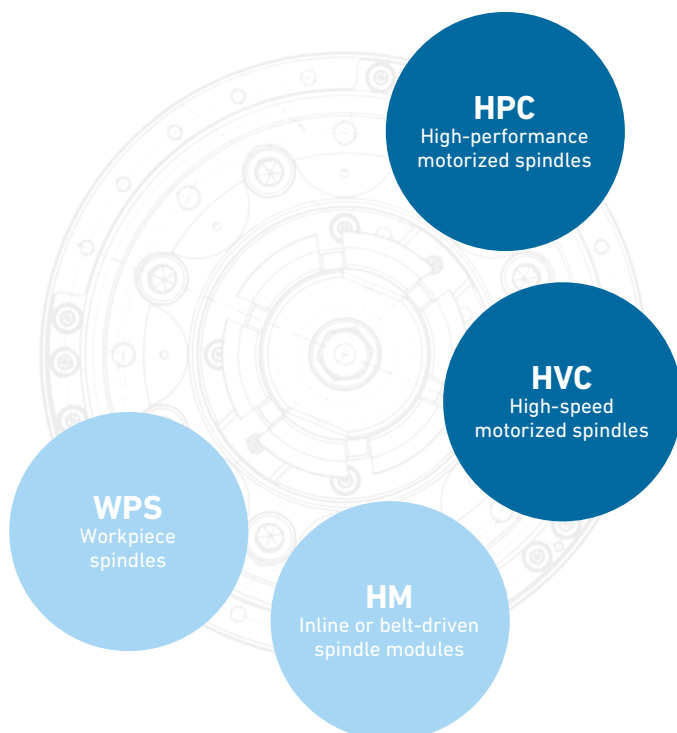
- Worldwide support from our own service staff
- Global organization always puts service nearby
- Unique global Spindle Exchange Program (SEP) gives you quick access to exchange spindles, with no stocking or handling fees
- Guaranteed maximum availability around the globe for minimized downtime



Platform

Whatever you need, we find the right solution for you

Step-Tec offers a comprehensive range of motor spindles with the speed, power, torque and thermal stability that leading machine manufacturers require. We develop and manufacture these spindles in platforms to offer machine tool builders unmatched flexibility, low integration costs, fast time to market and risk reduction so they can pursue machine development and respond to new business opportunities. Our spindle platforms range from 90 mm to 320 mm housing diameters, cover a performance range of 1 to 130 kW and deliver up to 1,200 Nm of torque. Depending on the application, choose from torque motors with speeds up to 75,000 min⁻¹ and the highest-available power density and agility.



Why do platforms rock? If you decide par example for HPC 190, build your sledge to integrate it into your machine range and enjoy its agility: Your main spindle is a 20 000 rpm/90 Nm Spindle.

You want to lean towards more price sensitive yet less performance-demanding market? Remain on the same interface and integration while reducing to 12 000 rpm/48 Nm.

You want to offer a heavier duty solution for more difficult to machine materials? Same platform! Go with 15 000 rpm/150 Nm.

A sudden deal opportunity for 3 machines with higher speed option? No risks, no wonder but possible with our platform! Go with 26 000 rpm/70 Nm.

Let's discuss your product positioning and evolution perspectives

Industries

To stay ahead of the competition, our range of motor spindles, solutions and services matches your unique requirements. In fast-growing market segments, we enable a future in which even the most complex, demanding industries profit from intelligent, high-performance, resource-efficient, fully predictive milling, mill-turning or grinding motor spindle solutions.

Automotive



Aerospace + Energy



Machinery



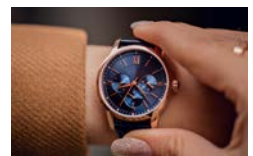
Medical + Micromachining



ICT and EC



Micromachining



Engineering

Your partner for engineering and integration

To ensure that the outstanding characteristics of our spindles match your interface requirements, Step-Tec engineers collaborate with you to develop solutions adapted to your applications.

We support you with the latest failure mode and effects analysis (FMEA) software, as well as thermal simulation and vibration analyses.

Our standard risk assessment includes cost control. Before we pursue a customized solution, our analysis determines whether one of our range of more than 100 standard spindles meets your specific needs.

Our focus

- + Best fit between spindle and machine interface
- + Minimal thermal influence of the spindle on the machine
- + Ideal spindle performance based on intense pre-analysis of thermal and dynamic behavior (vibration, resonance) and defined rigidity within the machine interface



Get personalized support for your unique machine setup from our team of experts.

Manufacturing

We build precision for your success

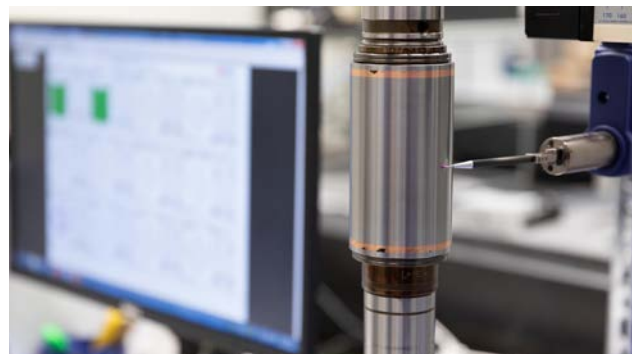
In-house production of high-precision parts for high-speed spindles serves as one of the keys to Step-Tec success. We focus on manufacturing superb rotationally symmetrical components and assemblies in small and medium quantities.

Benefits

- + Controlled part quality for long spindle life
- + Fast implementation of construction improvements
- + Manufacturing capabilities make us your long-term partner
- + High process reliability and repeatability among spindles



Step-Tec expertise includes both spindle manufacturing and grinding. On our conventional or CNC-controlled production machines, we create parts with the highest surface quality and dimensional accuracy in batch sizes down to one piece.



Spindle manufacturing demands accuracy on key elements. We combine the best measuring processes with our know-how and expertise to qualify final spindle parts and train our people to uphold our standards.



Our specialists assemble optimal components based on the approved process. Whether we build new or service existing spindles – our own products or brands we repair – we only use original parts.



We check spindle performance on unique in-house test benches located in climate-controlled rooms. All new and repaired spindles undergo a test run under various conditions, securing their readiness to perform in your machines.

Technology

A step ahead thanks to pioneering technologies

To meet constantly shrinking tolerances and increased demands on spindle performance, we provide solutions adapted for thermal stability, design and monitoring. Our engineers strive every day to create innovative and reliable solutions.

Benefits

- + Lower temperature fluctuations – from motor and bearings to tool tip – achieve the highest thermal stability and precision
- + Optimized thermal balance and hysteresis of the entire machining head achieves ideal precision
- + Obtain the highest spindle speeds through compact construction, repeatable manufacturing and tight assembly tolerances
- + Twin Air system and unique lubrication solution provide the flexibility to tackle any application or material

Design

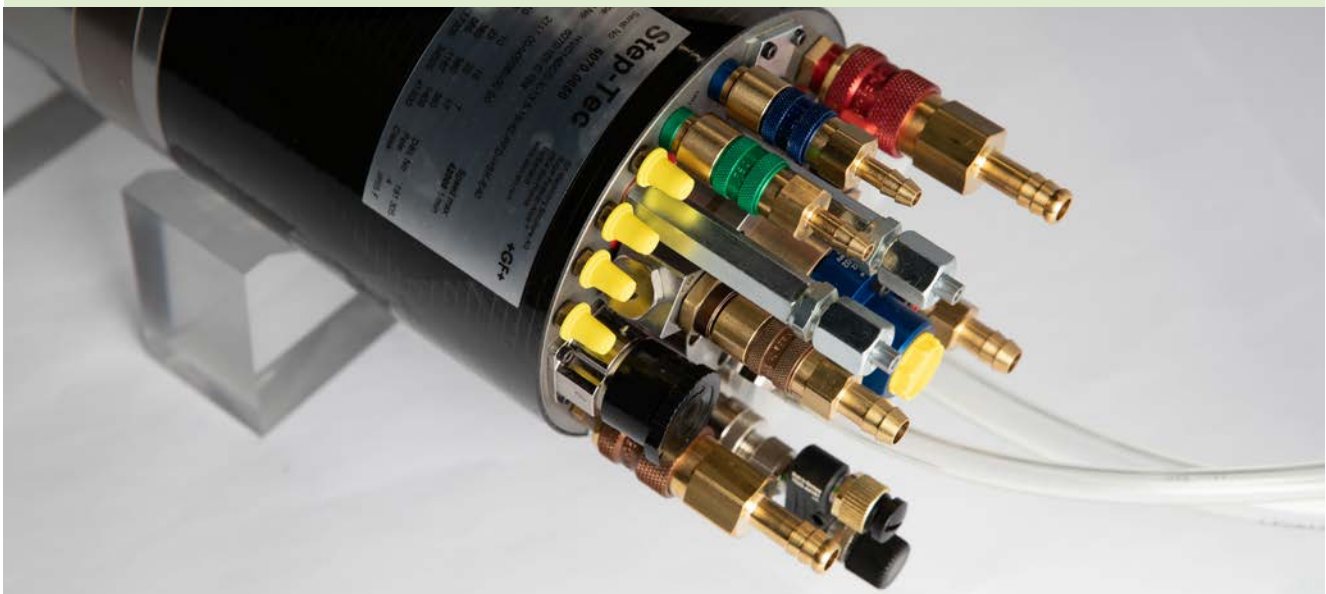
- + Compact construction
- + Leverage the latest material performances and fabrication technologies
- + Twin air system preventing contamination both ways (inside-out, outside-in)
- + Optimized bearing sizes for stiffness
- + Oil-air lubrication of ceramic bearings

Digitalisation

- + 3-axis temperature and vibration sensors
- + Spindle Diagnostic Module (SDM) records all process-relevant data throughout the entire service life
- + Spindle Diagnostic Software (SDS) helps analyzing spindle and process performances with diagnostic and analytical procedures

Thermal stability

- + Thermal stability by design
- + OptiCool (housing cooling) guarantees optimal temperature distribution and stability
- + CoolCore includes shaft cooling to dissipate heat from the motor and bearings
- + Emulsion cooling with twice the heat absorption of water

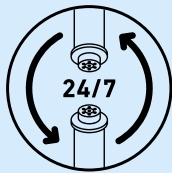


Support and Services

Ambitious clients become happy customers

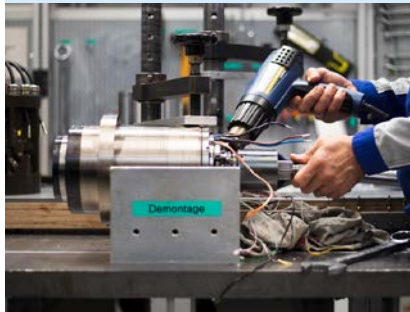
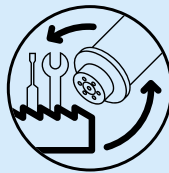
Ensure your long-term success when you benefit from Step-Tec's expertise and our comprehensive range of Spindle Service Solutions. We ensure that your motor spindle meets your expectations from its first to its last day of use. Our repair service carries an extensive warranty. We make sure that your spindle runs to its best capabilities. If problems do arise, choose our 24-hour Spindle Exchange Program or have us repair your spindle at our facilities, always with original parts. We mainly maintain our own Spindles and offer 3rd parties Spindle maintenance for selected model. Ask us for further information.

SEP Spindle Exchange Program



- + Receive spindle delivery within 24 hours
- + Flat fee whatever the damage occurred, whatever the repair effort or cost are required
- + Minimize production downtime
- + Receive up to a 24-month or 5,000-hour warranty

SFR Spindle Factory Repair



- + Cost related to the effective damage and repairing efforts
- + Professional disassembly and analysis of your spindle
- + Replacement with original wear/ spare parts for greater durability
- + Complete spindle transport logistics, including pickup
- + 12-month or 2,000-hour warranty on repaired parts

SOM Spindle On site Maintenance



- + Minimize impact of Maintenance on your operators' productivity
- + Full warranty coverage on all exchanged parts

Learn more about our services at
www.step-tec.com

Worldwide for you



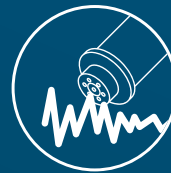
Spindle logistics



Spindle commissioning



Application consultation



Vibration analysis



Training



Third party spindle repair



Milling head repair



Spindle test



Balancing



Construction consultation

At a glance

We offer innovative spindle solutions that enable our customers to run their businesses efficiently and effectively. Our comprehensive package of customer services supports you throughout the life cycle of your equipment.

www.step-tec.com

