

Professional reconditioning of machine tool spindles



Every kind of spindle

When it comes to machine tools, SKF knows the game. We are not only developing and producing super-precision bearings for spindles, we also operate a multitude of machine tools with spindles worldwide. We know what it takes to keep a production running and how important it is to maintain a high level of reliability to keep production targets and customers satisfied.

In state-of-the-art service centres, SKF reconditions and upgrades a large number of machine tool spindles for optimum performance.

So, when it comes to maintaining, reconditioning and optimizing your machine tool spindle, SKF can offer you a breadth of in-house capabilities, technology, and global support that is unmatched in industry.

SKF provides you with a wide range of reconditioning services for machine tool spindles that have different:

- *Designs*
- *Brands*
- *Applications*
- *Technologies*
- *Defects and problems*



Reconditioning, a job for the experts

The high degree of accuracy and repeatability required by machine tool applications demands that highly skilled technicians with in-depth knowledge perform reconditioning and upgrades. Equally important is to have dedicated facilities with measuring capabilities and availability of precision machining. As a result, many machine tool users benefit from outsourcing the service of these critical pieces of equipment.



Reconditioning process

To help ensure reliable future spindle performance, reconditioning must be comprehensive and include a review of all details. That is why it is important to offer a reconditioning spindle service that effectively manages this most critical asset. SKF's total reconditioning process includes all necessary steps.

Reconditioning overview

1. General visual inspection
2. Incoming test (option)
3. Motor and electrical check
4. Drive component inspection
5. Spindle disassembly
6. Clamping system inspection
7. Bearing inspection
8. Failure mode determination
9. Coolant permeability check
10. Lubricant inspection
11. Sealing inspection
14. Bearing journal control
15. Tool nose and shaft control
16. Repairability review
17. Balancing of rotating parts
18. Spindle assembly with new bearings
19. Encoder adjustment
20. Spindle run-out control
21. Spindle clearance control
22. Spindle run-in
23. Imbalance and vibration control
24. Case filing and feedback forms

Reconditioning prolongs service life

Several root cause reasons lead to spindle defects and consequently to poor spindle performance or even breakdowns. Professional spindle reconditioning helps you to keep your machine tool asset performing at its best.

Root causes

- Crashes
- Overloads
- Lubrication failures
- Coolant/dirt penetration
- Normal fatigue wear
- Tool change errors
- Improper repair

Spindle defects

- Bearing damages
- Improper journal
- Taper run-out/wear
- Clamping malfunction
- Imbalance
- Stator error
- Alignment error

Reconditioning assures

- Service life impact
- Rigid and stiff
- Low heat generation
- Minimal vibration, chatter
- Minimum run-out
- Low friction
- No random malfunction

Production benefits

- Optimum component quality
- Efficient cutting performance
- Reduced stops/downtime
- Stable tool life
- Reliable production
- Reduced administrative cost
- Minimum attendance need

Predictive maintenance and on-site services



SKF can help you implement a predictive maintenance program to monitor your spindles. By offering a completely integrated monitoring solution, SKF gives you access to a range of hardware and software developed with a focus on the specific requirements of the production.

As a valuable option, you can utilize our comprehensive on-site services. Using SKF expertise provides you with an on-site check and adjustment service of your machine tool assets that include six different modules focusing on different areas of the machine tool, such as spindle rotation and bearing condition check, tool clamping system check and crash inspection.

A customized machine tool assessment kit is available to efficiently support the checking and evaluating of machine tool assets.

Service verification and traceability

Verification of each reconditioning case is a part of our quality assurance. Our reconditioning procedure, which includes technical standards with corresponding acceptance criteria, is defined and verified through long experience. This guarantees service with the right quality which is verified with documentation for every reconditioned spindle.

In addition, SKF utilizes an advanced data management system. By uniquely ID marking each asset during the reconditioning process, you will be able to trace your spindle through its future life cycle.

Everything connected to each service case is stored in our global database. This gives easy access and safe information storage for possible future use.

Outstanding capabilities for your benefit

In addition to the reconditioning, SKF can provide consultancy expertise and secure storage of your replacement spindles. This can include enhancements such as sealed super-precision bearings and design improvements.

Expertise

- Consultation and advice
- Spindle upgrading
- Sealed and hybrid super-precision bearings
- Lubrication and sealing system
- Design improvement

Spindle hotel

- Availability of extended warranty
- Secure storage with scheduled test run
- Guaranteed readiness and instant shipment
- Adapted container

Customer value

Having chosen SKF, you can trust us to give you value. The benefits we provide are obvious and accurate. Our service concept provides value to your operations. Using SKF services extend operating life cycle and reduce life cycle cost. Increased spindle reliability gives lower maintenance cost.

Your benefits

- Single supplier
- Minimum production losses
- Preventive maintenance input
- Few production stops
- Know-how source
- Ensured performance
- Convenient communication
- Customized solution
- Maintenance resource support

SKF provides

- Service on all brands and defects
- Short and adapted service responses
- Failure feedback and statistics
- Maximum spindle endurance
- Advisory services and project resource
- Vibration and mechanical testing
- Local service centres
- Flexible service behaviour
- Resource and knowledge source

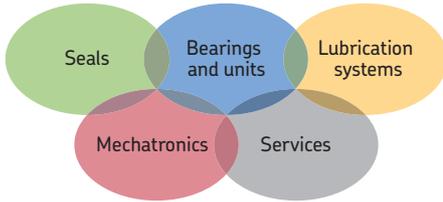
Enhance your competitiveness

SKF can partner with you to offer a customized service to suit your individual needs.

Partner frameworks

- On-site service
- Predefined lead time and pricing
- Customized reporting and statistics
- Dedicated spare part inventory
- Adapted packaging and shipment
- Customized acceptance levels
- Dedicated service technician
- Simplified administration
- Training





The Power of Knowledge Engineering

Drawing on five areas of competence and application-specific expertise amassed over more than 100 years, SKF brings innovative solutions to OEMs and production facilities in every major industry worldwide. These five competence areas include bearings and units, seals, lubrication systems, mechatronics (combining mechanics and electronics into intelligent systems), and a wide range of services, from 3-D computer modelling to advanced condition monitoring and reliability and asset management systems. A global presence provides SKF customers uniform quality standards and worldwide product availability.

The same quality worldwide

To stay competitive, it's vital to continuously drive knowledge and experience towards excellence. A source for sharing knowledge is our global service case databases. Using this, we efficiently deploy knowledge and experience in our worldwide network of state-of-the-art service centres.



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