

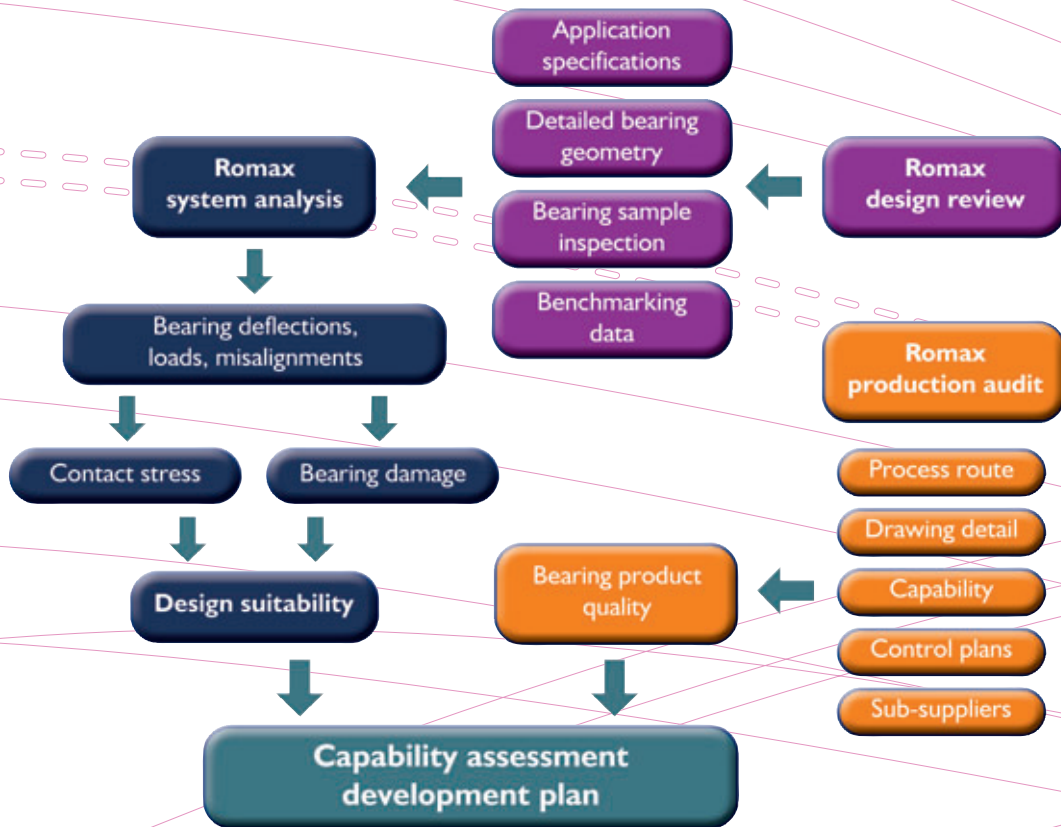


# Romax Bearing Consultancy

A complete range of engineering services from expert specialists in bearing technology

# Bearing Supplier Development

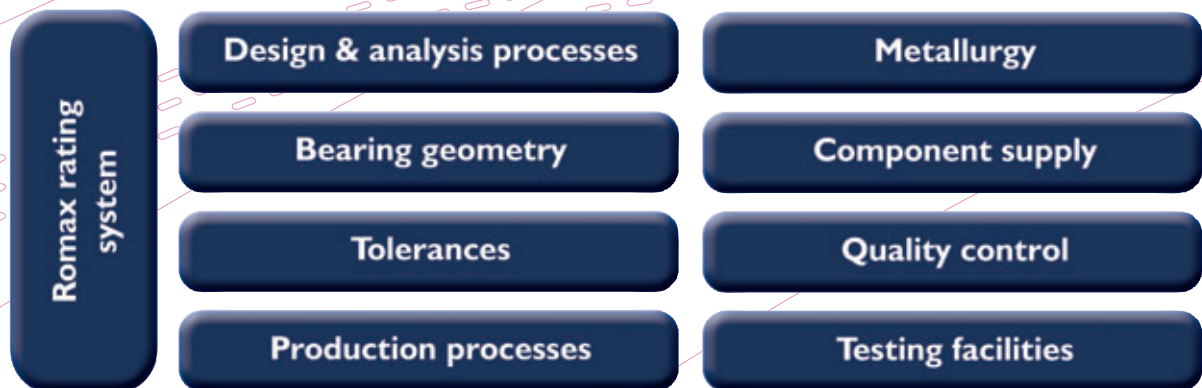
As consulting specialists, we can provide expert assessment and recommendations on bearings in relation to supplier capability, operating performance and product quality.



Making use of our experience and knowledge allows you to identify problems and make improvements at an early stage in the design and production process.

## Romax Rating System

The Romax audit rating system allows OEMs to compare the capabilities of various potential suppliers and for the bearing suppliers to identify areas for development in their design or manufacturing methods, with our expert recommendations.



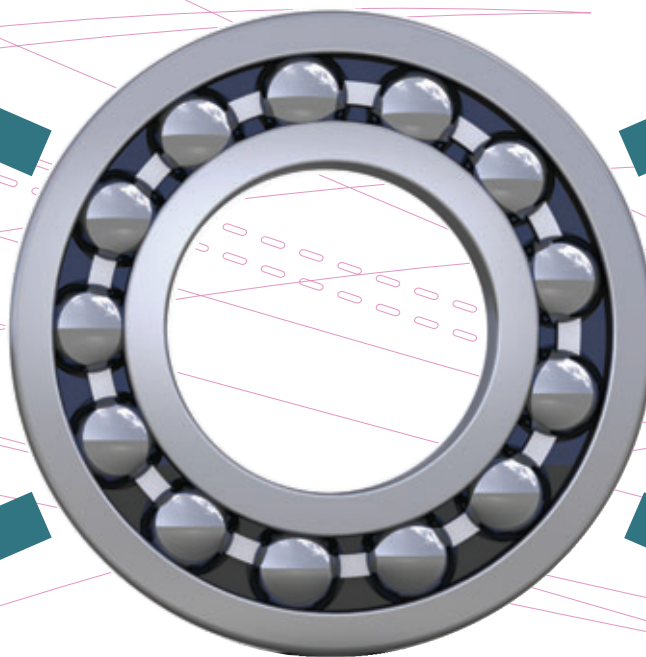
We have an extensive global network that enables a unique specialist service to give benefits to both bearing users and suppliers.

# Romax Bearing Consultancy

**Advanced analysis**  
System influence  
Micro-geometry  
Misalignment  
Durability  
Optimisation

**Feasibility study**  
Market survey  
Capability audit  
Machine selection  
Supplier review  
Benchmarking

**Trouble shooting**  
Failure modes  
Investigation  
Measurement  
Expert opinion  
Countermeasures



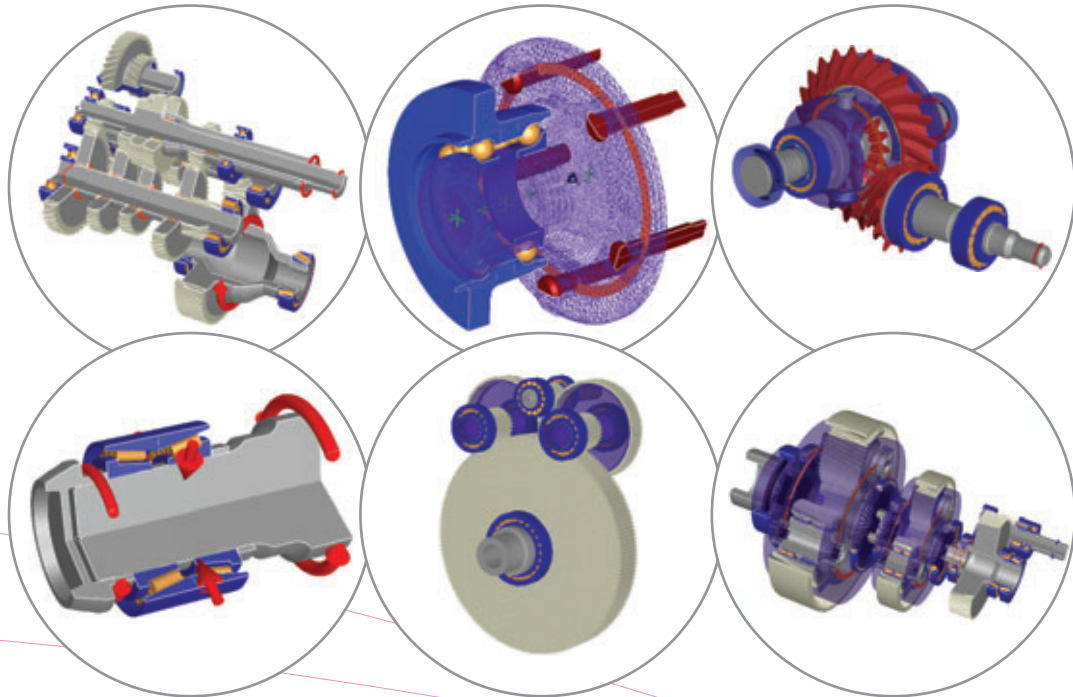
**Testing support**  
Requirements  
Test criteria  
Duty cycle definition  
Test rig design  
Results analysis

**Manufacturing support**  
Tolerance  
Process routes  
Machine selection  
Process improvement  
Control plans

**Metallurgy**  
Material specification  
Cleanliness  
Heat treatment  
Hardness  
Quality control

## Design Review

Our continued development of advanced analysis technology and processes allows us to assess all aspects of bearing design in a wide variety of applications.



We can investigate many system influences such as housing deflection and adjust bearing geometry to optimise performance using in-depth calculation methods for durability and contact stress.

## Advanced Training

We offer a complete range of training subjects related to bearing design, selection and production technology which are delivered by Romax experts.

<b>LEVEL 1</b>	<b>2 Weeks</b>	Fundamental theory Practical aspect fundamentals
<b>LEVEL 2</b>	<b>4 Weeks</b>	Fundamental theory Manufacturing, failure modes, testing RomaxDesigner analysis
<b>LEVEL 3</b>	<b>8 Weeks</b>	Fundamental theory, tribology, materials Manufacturing, failure modes, testing RomaxDesigner analysis
<b>LEVEL 4</b>	<b>12 Weeks</b>	Advanced theory, tribology, materials Manufacturing, failure modes, testing Application case studies

The course content can be tailored to suit any requirements or knowledge level to allow participants to expand their capabilities in dealing with all bearing issues.

## Bearing Specialist Experience

Romax have a number of specialists with significant expertise working within the bearing industry:

### Production

Manufacturing and metallurgy engineers that have previously worked at major bearing suppliers for over 30 years are available to support our clients.

### Design

Experienced engineers with a high level of academic qualifications are also involved in our consultancy projects with extensive knowledge of bearing theory, design and analysis.

### Inspection

Our customers have benefited greatly from Romax expertise for bearing failure identification and countermeasures.



## Romax Project Experience

### Strategic Consulting

- Risk analysis for advising on approval of new bearing products and suppliers for automotive and truck gearbox applications.
- Investment feasibility studies considering machine and tooling requirements for a bearing suppliers' new product range.
- Assistance on business and technology strategies for Asian companies planning to supply to the wind turbine market.

### Design Support

- Design verification of bearing selection for automotive and wind turbine gearboxes conducting durability analysis and micro-geometry optimisation.
- Design review and assessment of large bearings designs using special finite element techniques for flexible structures.
- Modelling and analysis of passenger car wheel hub bearing applications against different life method and loading cycles.

### Failure Investigation

- Assessment of raceway and fatigue conditions of gearbox bearings following testing under application duty cycle loads.
- Investigation and review of failures occurring in axle box bearings for various different railway applications.

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