Slewing Bearings

Selection, mounting, lubrication and RFQ preparation guide

A practical checklist for applications that combine axial load, radial load and overturning moment.

What this guide helps you do

Slewing bearings support slow or intermittent rotational movement in equipment where a large-diameter bearing arrangement must transfer loads between a rotating and a stationary structure. Selection is not based on diameter alone: load direction, overturning moment, bolt pattern, gear arrangement, mounting stiffness and operating duty must be reviewed together.

At a glance

Question	Why it matters
What is the application?	Defines load direction, duty cycle, environment and required life.
What is the complete arrangement?	Bearing, shaft, housing, seals, lubricant and mounting structure work together.
What must be confirmed before ordering?	Full designation, dimensions, load/speed conditions and approved technical data.

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Prepared for engineering review and RFQ preparation. It is not a released product drawing, guaranteed rating, certificate or substitute for the selected manufacturer's catalogue.

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1. Understand the bearing arrangement

Start by defining the function the bearing must perform. Similar-looking bearings can differ in load direction, stiffness, speed capability, mounting requirements and maintenance needs.

Application fit

- **Typical use cases:** Excavators and construction equipment, lifting and handling systems, turntables, indexing platforms, wind and industrial machinery. Suitability depends on the actual load spectrum and duty.
- **What must be known first:** Axial and radial loads, overturning moment, load combinations, rotation speed, oscillation angle, duty cycle, shock, required life, mounting envelope and environmental exposure.
- **What a catalogue value cannot replace:** A bearing capacity value cannot confirm the strength of the connected structure, bolt group, gear drive, lubrication system or installation surface.

Design variants to compare

Configuration / feature	Selection notes
Single-row four-point contact ball	Compact arrangement; commonly used where combined loads and moment resistance are required. Check load combinations, stiffness and operating duty.
Double-row ball	Different ball-row geometry can provide a different load and moment arrangement. Confirm the exact design and rated data for the selected series.
Crossed roller	Rollers arranged in alternating directions can support combined loads with high stiffness in suitable compact arrangements. Verify speed, friction, precision and contamination requirements.
Three-row roller	Separate roller rows can be arranged to handle different load components. These designs require close attention to mounting stiffness, lubrication and load calculation.
Gear options	Internal gear, external gear or non-geared designs affect envelope, pinion access, backlash, sealing and maintenance clearance.

Do not compare price or nominal size until the configuration, suffixes and interface dimensions are aligned. If a part is replacing an existing bearing, use the complete designation and drawing rather than appearance alone.

2. Selection inputs and interface checks

The table below is a working checklist. Record known values and mark unknown values for confirmation before quotation or engineering approval.

Input	What to provide / verify
Load case	Maximum, continuous and occasional axial/radial loads; overturning moment; direction changes; shock and emergency conditions.
Motion	Continuous rotation or oscillation, speed, acceleration, reversal frequency, duty cycle and positioning accuracy.
Interface	Inner/outer diameters, height, mounting face dimensions, bolt-circle diameters, hole sizes, gear module/teeth where applicable.
Structure	Mounting-ring stiffness, support flatness, bolt grade/quantity/preload method and connected-structure deformation.
Environment	Temperature, water, dust, corrosion, washdown, outdoor exposure and sealing/lubrication access.
Service	Expected life, maintenance interval, grease type/quantity, replenishment access and replacement constraints.

Questions to resolve before approval

- Are loads steady, intermittent, reversing or shock-loaded?
- Is the stated speed continuous, peak, or a short-duration value?
- Are shaft and housing fits, shoulders and support stiffness known?
- Will temperature, lubricant or sealing requirements change during operation?
- Is interchangeability required, and what drawing or source confirms it?

When data are missing, state the assumption explicitly. Do not turn an unknown load, speed, clearance or preload into an invented numerical value.

3. Installation, lubrication and maintenance

Many early bearing failures are associated with contamination, poor fits, misalignment, inappropriate lubrication or installation damage. Follow the selected product's installation instructions and document the final setting where relevant.

Installation checklist

- Inspect both mounting faces for flatness, cleanliness, burrs, paint build-up and local damage. Do not use the bearing to pull an uneven structure into alignment.
- Confirm orientation and mounting marks where specified. Check gear engagement, pinion alignment and backlash against the approved drawing or supplier instructions.
- Use the specified fasteners and tightening sequence. Apply the approved torque or preload method; do not assume a generic torque value is correct for every bolt and joint.
- Grease only with a compatible lubricant and the specified method. Rotate slowly during initial lubrication when the product instructions require it, and confirm grease reaches the intended raceway areas.
- After installation, rotate through the intended operating range and inspect for abnormal noise, binding, local tight spots, leakage, looseness and uneven gear contact.

Symptom-to-check guide

Observed symptom	First checks
Local tight spot or uneven torque	Check support-face distortion, mounting bolt sequence, pinion alignment, gear contact and contamination.
Noise or vibration	Check lubrication, raceway contamination, rolling-element damage, gear mesh and the rigidity of the connected structure.
Premature wear	Review actual load spectrum, shock, misalignment, lubricant condition, sealing and whether the selected design matches the duty.
Fastener loosening	Investigate joint stiffness, preload method, surface settling, load reversals and installation procedure; do not simply retighten without cause analysis.
Grease leakage or contamination	Inspect seals, lubrication amount, seal damage and environmental ingress.

Record the operating condition when a symptom appears: load, speed, temperature, noise/vibration, lubrication state, recent maintenance and any change to the surrounding structure. This information helps separate a bearing issue from an installation or system issue.

4. RFQ checklist — send the right information

A complete RFQ reduces clarification cycles and helps the supplier check whether the requested bearing and arrangement match the application. Provide drawings or photos where dimensions and interfaces are difficult to describe.

- Application and equipment type; duty cycle and expected operating life.
- Maximum and typical axial load, radial load and overturning moment, including load combinations and shock factors if known.
- Rotation speed, oscillation angle, start/stop frequency and required positioning accuracy.
- Outside/inside diameter, height, mounting drawings, bolt patterns and support-structure details.
- Gear requirement: internal/external/none, pinion data, module, tooth count and backlash requirement if applicable.
- Operating environment, temperature range, sealing, corrosion protection and lubricant preference.
- Required inspection documents, traceability, packaging, quantity and delivery destination.

Suggested RFQ email structure

Field	Your information
Product / full designation	_____
Quantity and annual demand	_____
Application / equipment	_____
Loads, speed and duty cycle	_____
Dimensions / drawing number	_____
Operating environment / lubricant	_____
Quality documents / inspection	_____
Delivery destination / target date	_____

Need help confirming a designation or a substitution? Send the full model number, drawing, quantity and operating conditions to service@eimbearing.com or visit www.eimbearing.com.

5. Technical boundaries and final verification

This document provides general selection and procurement guidance. It does not provide product-specific rated loads, fatigue-life guarantees, maximum speeds, permissible misalignment, preload values, fit tolerances or installation torque unless those values are stated in an approved drawing or product-specific data sheet.

Before release to production

- Confirm the full bearing designation, suffixes and dimensional drawing.
- Confirm the source and revision of any load, speed, life or precision rating used in calculations.
- Verify the bearing, shaft, housing, seals, lubricant and mounting fasteners as a complete system.
- Record any deviations, substitutions and approval responsibilities.
- Follow the supplier's current installation, lubrication and maintenance instructions.

Important note

Catalogue values and suffix meanings may vary by manufacturer and product family. Where a guide describes a general bearing arrangement, it should not be interpreted as proof that two products are interchangeable. Confirm final technical suitability with the applicable product drawing and written supplier confirmation.

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