

CATEGORY SELECTION GUIDE

Precision Crossed Roller Bearings Category Selection Guide

Precision crossed roller bearings use orthogonally crossed rollers to support radial, axial and moment loads in a compact rotary arrangement. The catalog covers five Product Platforms and 46 SKUs; use installation envelope and published load/dimension values to retain candidates, then confirm preload, precision, speed, sealing and the exact SKU.

CATEGORY SELECTION GUIDE

CATEGORY	CURRENT CATALOG	REVISION / ISSUE
Precision Crossed Roller Bearings	5 Product Platforms / 46 SKUs	R01 2026-09-04

CONTENTS

01	Category Scope and Objective
02	Typical Applications and Selection Inputs
03	Product Platform Architecture
04	Product Platform Directory
05	Product Platform Selection Matrix
06	Selection Sequence
07	SKU Refinement
08	Engineering Information Checklist
09	Engineering Use and Verification Notice

01 | Category Scope and Objective

Product catalog and suitable use

Item	Current category
Product catalog	5 Product Platforms / 46 SKUs
Suitable use	Compact rotary support for precision machinery, robot joints, rotary tables and medical or measurement equipment.

02 | Typical Applications and Selection Inputs

Typical applications

Robot joints and precision rotary axes Use crossed-roller bearing Product Platforms where compact multi-direction load support and controlled rotation are required.	CNC and precision machinery Retain candidates by envelope, radial/axial load direction, speed and required rotation accuracy.	Medical and measurement equipment Confirm preload, sealing, cleanliness and mounting details against the exact SKU and controlled documents.
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Inputs to record before shortlisting

01	Installation envelope	Record inner diameter, outer diameter, width, shoulders, mounting pattern and surrounding clearances.
02	Load and life	Record radial, axial and moment loads, shock, duty cycle and required life.
03	Precision and preload	Record rotation accuracy, stiffness, preload or clearance and allowable starting torque.
04	Speed, sealing and environment	Record speed, lubricant, contamination, temperature and sealing requirements.

03 | Product Platform Architecture

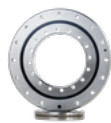
Platform navigation by public catalog identity

The five Product Platform groups are the public catalog navigation units in this category. Retain candidates by envelope, load and application requirements; platform identity does not replace SKU-level verification.

ES-BR-C27-S008 Product Platform ES-BR-C27-S008 contains 7 SKUs and is navigated by its published platform identity.	ES-BR-C27-S011 Product Platform ES-BR-C27-S011 contains 25 SKUs and is navigated by its published platform identity.
ES-BR-C27-S012 Product Platform ES-BR-C27-S012 contains 1 SKUs and is navigated by its published platform identity.	ES-BR-C27-S014 Product Platform ES-BR-C27-S014 contains 10 SKUs and is navigated by its published platform identity.
ES-BR-C27-S006 Product Platform ES-BR-C27-S006 contains 3 SKUs and is navigated by its published platform identity.	

04 | Product Platform Directory

Current Product Platforms



ES-BR-C27-S008 Product Platform

This Product Platform contains 7 SKUs. Published standard values include Bearing Width 22 / 26 / 15.87 / 22.22 / 25.4 / 35 / 86, Inner Ring Diameter 40 / 57 / 76.2 / 101.6 / 215.9 / 124.5 / 384, Outer Diameter 112 / 140 / 145.79 / 196.85 / 311 / 234 / 646, Radial Dynamic Load Rating 14.3 / 20.7 / 22.8 / 40 / 54 / 75 / 455 and Mass 1.4 / 2.4 / 1.2 / 3.6 / 6.9 / 7 / 115. Retain this platform by the installation envelope and load direction, then confirm the exact SKU's mounting, preload, speed, sealing and load values.

7 SKUs



ES-BR-C27-S011 Product Platform

This Product Platform contains 25 SKUs. Published standard values include Bearing Width 16 / 12 / 15 / 13 / 25 / 20 / 35 / 10 / 40, Inner Ring Diameter 100 / 110 / 120 / 130 / 140 / 150 / 160 / 170 / 190 / 200 / 220 / 240 / 250 / 300 / 350 / 400 / 40 / 450 / 45 / 500 / 50 / 600 / 60 / 70 / 90, Outer Diameter 140 / 135 / 150 / 160 / 175 / 180 / 220 / 240 / 260 / 280 / 300 / 310 / 360 / 400 / 480 / 65 / 500 / 70 / 550 / 80 / 700 / 90 / 100 / 130, Radial Dynamic Load Rating 31.7 / 12.5 / 24.2 / 25 / 25.9 / 27 / 81.7 / 29 / 41.7 / 84.2 / 92.3 / 68.3 / 69.3 / 76.3 / 54.1 / 156 / 8.33 / 61.7 / 8.62 / 65.5 / 16.7 / 264 / 18 / 19.4 / 31.4 and Mass 0.83 / 0.4 / 0.72 / 1 / 0.68 / 3.14 / 2.21 / 2.99 / 4 / 4.1 / 4.5 / 5 / 5.9 / 3.9 / 14.5 / 0.16 / 6.6 / 0.17 / 7.3 / 0.27 / 29 / 0.3 / 0.35 / 0.75. Retain this platform by the installation envelope and load direction, then confirm the exact SKU's mounting, preload, speed, sealing and load values.

25 SKUs



ES-BR-C27-S012 Product Platform

This Product Platform contains 1 SKU. Published standard values include Bearing Width 16, Inner Ring Diameter 140, Outer Diameter 175, Radial Dynamic Load Rating 25.9 and Mass 1. Retain this platform by the installation envelope and load direction, then confirm the exact SKU's mounting, preload, speed, sealing and load values.

1 SKU



ES-BR-C27-S014 Product Platform

This Product Platform contains 10 SKUs. Published standard values include Bearing Width 25.4 / 56, Inner Ring Diameter 130 / 150 / 180 / 220 / 280 / 360 / 344 / 474 / 674 / 774, Outer Diameter 205 / 225 / 255 / 295 / 355 / 435 / 484 / 614 / 814 / 914, Radial Dynamic Load Rating 42 / 46 / 49 / 54 / 59 / 68 / 146 / 170 / 200 / 215 and Mass 3.3 / 3.7 / 4.3 / 5.1 / 6.3 / 7.8 / 28 / 38 / 52 / 60. Retain this platform by the installation envelope and load direction, then confirm the exact SKU's mounting, preload, speed, sealing and load values.

10 SKUs



ES-BR-C27-S006 Product Platform

This Product Platform contains 3 SKUs. Published standard values include Bearing Width 22 / 28 / 45, Inner Ring Diameter 80 / 115 / 350, Outer Diameter 165 / 240 / 540, Radial Dynamic Load Rating 33.1 / 80.3 / 222 and Mass 2.6 / 6.8 / 35.4. Retain this platform by the installation envelope and load direction, then confirm the exact SKU's mounting, preload, speed, sealing and load values.

3 SKUs

05 | Product Platform Selection Matrix

Published standard values by Product Platform

Product Platform	SKU count	Inner Ring Diameter	Outer Diameter	Bearing Width	Radial Dynamic Load Rating	Radial Static Load Rating	Mass
ES-BR-C27-S008 Product Platform	7	40 / 57 / 76.2 / 101.6 / 215.9 / 124.5 / 384	112 / 140 / 145.79 / 196.85 / 311 / 234 / 646	22 / 26 / 15.87 / 22.22 / 25.4 / 35 / 86	14.3 / 20.7 / 22.8 / 40 / 54 / 75 / 455	14.2 / 18.4 / 21.5 / 32.5 / 57 / 95 / 670	1.4 / 2.4 / 1.2 / 3.6 / 6.9 / 7 / 115
ES-BR-C27-S011 Product Platform	25	100 / 110 / 120 / 130 / 140 / 150 / 160 / 170 / 190 / 200 / 220 / 240 / 250 / 300 / 350 / 400 / 40 / 450 / 45 / 500 / 50 / 600 / 60 / 70 / 90	140 / 135 / 150 / 160 / 175 / 180 / 220 / 240 / 260 / 280 / 300 / 310 / 360 / 400 / 480 / 65 / 500 / 70 / 550 / 80 / 700 / 90 / 100 / 130	16 / 12 / 15 / 13 / 25 / 20 / 35 / 10 / 40	31.7 / 12.5 / 24.2 / 25 / 25.9 / 27 / 81.7 / 29 / 41.7 / 84.2 / 92.3 / 68.3 / 69.3 / 76.3 / 54.1 / 156 / 8.33 / 61.7 / 8.62 / 65.5 / 16.7 / 264 / 18 / 19.4 / 31.4	48.6 / 24.1 / 43.2 / 46.7 / 50.1 / 53.5 / 135 / 62.1 / 82.9 / 157 / 171 / 145 / 150 / 178 / 143 / 370 / 10.6 / 182 / 11.3 / 201 / 20.9 / 721 / 24.3 / 27.7 / 45.3	0.83 / 0.4 / 0.72 / 1 / 0.68 / 3.14 / 2.21 / 2.99 / 4 / 4.1 / 4.5 / 5 / 5.9 / 3.9 / 14.5 / 0.16 / 6.6 / 0.17 / 7.3 / 0.27 / 29 / 0.3 / 0.35 / 0.75
ES-BR-C27-S012 Product Platform	1	140	175	16	25.9	50.1	1
ES-BR-C27-S014 Product Platform	10	130 / 150 / 180 / 220 / 280 / 360 / 344 / 474 / 674 / 774	205 / 225 / 255 / 295 / 355 / 435 / 484 / 614 / 814 / 914	25.4 / 56	42 / 46 / 49 / 54 / 59 / 68 / 146 / 170 / 200 / 215	96 / 110 / 127 / 151 / 185 / 236 / 225 / 330 / 455 / 510	3.3 / 3.7 / 4.3 / 5.1 / 6.3 / 7.8 / 28 / 38 / 52 / 60
ES-BR-C27-S006 Product Platform	3	80 / 115 / 350	165 / 240 / 540	22 / 28 / 45	33.1 / 80.3 / 222	50.9 / 135 / 473	2.6 / 6.8 / 35.4

06 | Selection Sequence

From application inputs to SKU

- 01 Retain by installation envelope**
Use Inner Ring Diameter, Outer Diameter and Bearing Width to retain compatible Product Platforms.
- 02 Check load direction and ratings**
Compare Radial Dynamic Load Rating and Radial Static Load Rating with calculated loads; add axial and moment checks where applicable.

03 Check precision, preload and speed

Confirm the required rotation accuracy, stiffness, preload/clearance, speed and sealing configuration.

04 Confirm mounting details

Check shoulders, mounting pattern, chamfers, lubrication and surrounding structure against the exact SKU.

05 Confirm the SKU

Confirm the remaining SKU against its full parameter set and controlled engineering documents.

07 | SKU Refinement

Parameters used to move from Product Platform to SKU

Standard parameter	Refinement role
Bearing Width	Check axial installation space and stiffness envelope.
Inner Ring Diameter	Match the shaft or inner mounting interface.
Body Outer Diameter	Match the housing or outer mounting interface.
Radial Dynamic Load Rating	Compare with calculated radial load and required life.
Radial Static Load Rating	Check static and shock load conditions.
Mass	Include bearing mass in moving and support calculations.
Shaft Diameter	Confirm the shaft interface where this field is provided.
Pitch Circle Diameter	Confirm the mounting pattern and bolt circle.
Minimum Chamfer Radius	Check mating shoulder clearance and edge geometry.

Lightweight SKU confirmation sequence

01 Retain by installation envelope

Use Inner Ring Diameter, Outer Diameter and Bearing Width to retain compatible Product Platforms.

02 Check load direction and ratings

Compare Radial Dynamic Load Rating and Radial Static Load Rating with calculated loads; add axial and moment checks where applicable.

03 Check precision, preload and speed

Confirm the required rotation accuracy, stiffness, preload/clearance, speed and sealing configuration.

04 Confirm mounting details

Check shoulders, mounting pattern, chamfers, lubrication and surrounding structure against the exact SKU.

05 Confirm the SKU

Confirm the remaining SKU against its full parameter set and controlled engineering documents.

08 | Engineering Information Checklist

Record before RFQ or engineering evaluation

01	Rotary function	Axis function, accuracy, speed, duty cycle and motion profile.
02	Loads	Radial, axial, moment, shock and required life.
03	Mechanical interface	Inner/outer diameter, width, shoulders, mounting pattern, chamfer and clearances.
04	Environment and lubrication	Speed, lubricant, temperature, contamination, sealing and maintenance access.
05	Required documents	SKU Product Datasheet, Dimensional & Integration Guide, 2D drawing and controlled 3D resources.

09 | Engineering Use and Verification Notice

Controlled engineering documents

01	SKU Product Datasheet	Use the current document for exact SKU parameters and configuration verification.
02	Dimensional & Integration Guide	Use the applicable guide and 2D drawing for envelope, mounting, preload and installation details.
03	Controlled 3D resources	Request STEP or native CAD for the exact SKU through the controlled engineering-file process.

Final verification statement

This guide supports preliminary Product Platform and SKU selection. Before design freeze, procurement or use, verify the exact SKU, mechanical interfaces, load ratings, preload, speed, sealing, environmental conditions and current controlled engineering documents. Do not derive missing values from a SKU code, Product Platform name, adjacent SKU or a single rated value.