ENGINEERING DOCUMENTATION

Precision Crossed Roller Bearing

Dimensional & Integration Guide

DOCUMENT	REVISION / ISSUE	STATUS
DIG-ES-BR-C27-S011-V008	DRAFT-08 / 26 Aug 2026	Engineering Integration Reference

Integration Overview

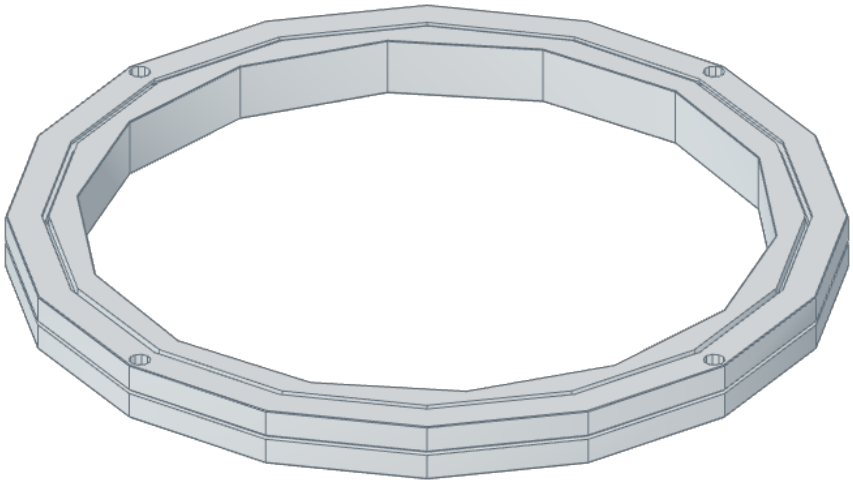
Precision Crossed Roller Bearing for precision rotary axes and compact motion assemblies. This guide supports mounting datum control, interface planning, load-path validation, rotation boundaries, lubrication, handling and commissioning planning for ES-BR-C27-S011-V008.

Key Integration Facts

INTEGRATION ITEM	PUBLISHED VALUE
Inner Ring Diameter	150 mm
Body Outer Diameter	180 mm
Bearing Width	13 mm
Radial Dynamic Load Rating	27 kN
Mass	0.68 kg

3D Orientation Reference

This axonometric reference provides a quick orientation check for the ring body and mounting relationship of ES-BR-C27-S011-V008.



Axonometric Orientation View

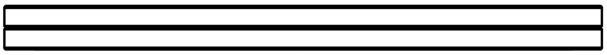
Orientation reference only. Use the published exact-SKU values and exact-SKU mechanical drawing for dimensions, hole geometry, fits and machining decisions.

Exact-SKU Interface Cross-Reference

INTEGRATION TOPIC	PUBLISHED EXACT-SKU REFERENCE
Ring interfaces and envelope	Inner Ring Diameter: 150 mm; Body Outer Diameter: 180 mm; Bearing Width: 13 mm. Confirm the exact hole-group geometry and interface details in the exact-SKU mechanical drawing.
Mounting-interface reference	Pitch Circle Diameter: 163.3 mm. Confirm the exact hole-group geometry and interface details in the exact-SKU mechanical drawing.
Locating and service features	Shoulder Diameter Dh: 172 mm; Shoulder Diameter ds: 157 mm; Minimum Chamfer Radius: 2 mm. Confirm the exact hole-group geometry and interface details in the exact-SKU mechanical drawing.

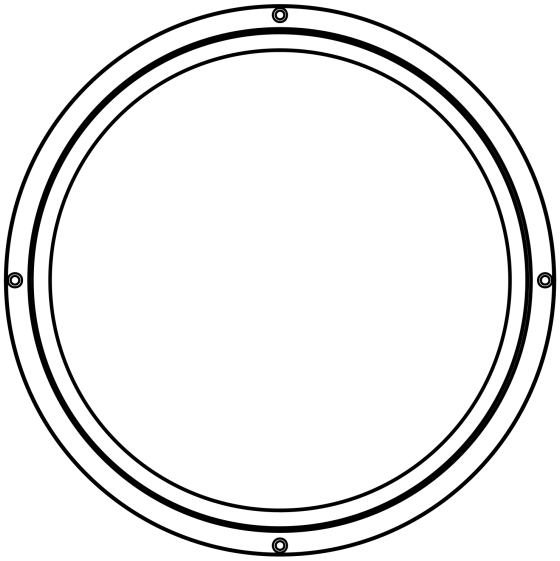
Product Structure & Views

These views present product structure, mounting interfaces and relevant integration geometry for this SKU.



Mechanical View 1

Mechanical View 2



Mechanical View 3

Overall Dimensions and Mounting Interface

PARAMETER	PUBLISHED VALUE	UNIT
Inner Ring Diameter	150	mm
Body Outer Diameter	180	mm
Bearing Width	13	mm
Mass	0.68	kg

- Confirm the exact-SKU installation envelope, locating surfaces, mounting faces and surrounding service clearance from the drawing.
- Provide continuous rigid support and verify host-face flatness, parallelism, axis relationship and cleanliness against applicable engineering limits.

Mounting Pattern and Fastener Control

PARAMETER	PUBLISHED VALUE	UNIT
Inner Ring Diameter	150	mm
Body Outer Diameter	180	mm
Bearing Width	13	mm

- Use the exact-SKU hole groups and applicable assembly procedure. Do not infer fits, fasteners or tightening values from related sizes.
- Keep mating parts seated during a staged diagonal tightening sequence and investigate abnormal rotation or binding during integration planning.

Published Mounting Interface

PARAMETER	PUBLISHED VALUE	INTEGRATION REQUIREMENT
Inner Ring Diameter	150 mm	Use exact-SKU applicable product documentation; validate the installed system.
Body Outer Diameter	180 mm	Use exact-SKU applicable product documentation; validate the installed system.
Bearing Width	13 mm	Use exact-SKU applicable product documentation; validate the installed system.

Axial, Radial and Moment Load Path

PARAMETER	PUBLISHED VALUE	UNIT
Radial Dynamic Load Rating	27	kN
Radial Static Load Rating	53.5	kN

- Use published component ratings as inputs to a machine-level calculation. Validate radial, axial and overturning loads, shock, stiffness, duty cycle and safety factors.

Rotation Accuracy and Speed

- Validate speed, friction, accuracy and temperature under the installed load, lubrication, orientation and motion cycle.

Published Load, Accuracy and Speed Boundaries

PARAMETER	PUBLISHED VALUE	INTEGRATION REQUIREMENT
Radial Dynamic Load Rating	27 kN	Use exact-SKU applicable product documentation; validate the installed system.
Radial Static Load Rating	53.5 kN	Use exact-SKU applicable product documentation; validate the installed system.

Lubrication and Service

- Use the applicable lubrication specification and prevent incompatible grease, debris and moisture from entering the bearing.
- During commissioning and maintenance, check smooth rotation, temperature, noise, fastening security, contamination and accuracy drift.

Handling, Transport and Disassembly

- Use only selected lifting and extraction features with a rated handling method. Do not apply impact loads through rings or rolling elements.
- Do not split, interchange or re-stack bearing components during installation or removal. Preserve the specified assembly relationship.

Integration Checklist

01	Confirm the 2D drawing, published parameters and applicable product documentation identify this exact SKU.
02	Verify inner diameter, outer diameter, height or width, mounting faces and installation envelope.
03	Check host-face flatness, parallelism, cleanliness, support stiffness and complete load path.
04	Confirm hole groups, fastener specification, engagement and tightening controls from applicable product documentation.
05	Validate radial, axial and overturning loads, shock, duty cycle, speed, friction and temperature for the installed system.
06	Use the current lubrication method and protect the bearing from contamination.
07	Use specified lifting and extraction features and avoid impact, component interchange or uncontrolled disassembly.
08	Commission at low energy and check smooth rotation, temperature, noise, vibration, fastening security and abnormal conditions.

View SKU Product Datasheet Request controlled 2D drawing Request controlled STEP review Request a Quote

Engineering Use and Verification Notice

01. This Dimensional & Integration Guide applies only to EmbodyStack SKU ES-BR-C27-S011-V008 and is intended for dimensional evaluation and preliminary integration. It is not a applicable manufacturing drawing, bearing selection approval, complete machine load rating, lubrication specification, safety validation or integration planning document and must not be used as the sole basis for machining, fastener selection, lifting, disassembly, service intervals or final integration. Before design freeze, installation or commissioning, verify all dimensions, datum geometry, fits, surface condition, hole groups, fastener engagement and tightening controls, axial, radial and moment loading, rotation boundaries, lubrication, temperature, contamination, handling and maintenance requirements against applicable EmbodyStack engineering data for this exact SKU. Where this guide and applicable product documentation differ, the applicable product documentation governs. Validate the complete bearing, host structure, drive, load cycle, guarding, fault cases and applicable regulatory requirements under intended operating conditions.