उत्पाद मैनुअल
नीडल रोलर बियरिंग्स
आईएस 4215: 2026 के अनुसर

PRODUCT MANUAL
NEEDLE ROLLER BEARINGS
According to IS 4215: 2026

यह उत्पाद नियमावली सभी क्षेत्रीय/शाखा कार्यालयों और लाइसेंसधारियों द्वारा विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम, 2018 की योजना-I के अंतर्गत प्रमाणन के संचालन में एकरूपता और पारदर्शिता सुनिश्चित करने के लिए संदर्भ सामग्री के रूप में उपयोग की जाएगी। बीआईएस प्रमाणन प्राप्त करने के इच्छुक भावी आवेदक भी इस दस्तावेज़ का उपयोग कर सकते हैं।

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure uniformity of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations,2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification.

1.	**मानक संख्या / IS No.**	:	IS 4215: 2026
	शीर्षक / Title	:	Needle Roller Bearings
	संशोधनों की संख्या **No. of amendments**	:	0
2.	**नमूनाकरण दिशानिर्देश / Sampling Guidelines**		
a)	**कच्चा माल** **Raw material**	:	• Needle Rollers shall conform to IS 4217 • Inner ring, Outer ring, Back face, Thrust washers or plates shall conform to IS 17111 • Cages (Cl. 5.2 & 5.3 of IS 4215) *Note: This section indicates the requirements for raw material (if specified in the IS) for which compliance is to be established during Grant of Licence/Change in Scope of Licence/Factory Surveillance.*
b)	**समूहीकरण दिशानिर्देश** **Grouping Guidelines**	:	Please refer **ANNEX – A**
c)	**नमूने का परिमाण** **Sample Quantity**	:	04 bearings
d)	**परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर** **Parameters to be Declared in Test Request**		Following shall be declared in addition to the parameters given under S. No. 6: • Designation • Bearing outside diameter • Bearing width *Note: Apart from the above, any other requirements/ parameters may also be declared as per the standard, as applicable.*
3.	**परीक्षण उपकरण की सूची** **List of Test Equipment**	:	Please refer **ANNEX – B**
4.	**निरीक्षण एवं परीक्षण योजना** **Scheme of Inspection and Testing**	:	Please refer **ANNEX – C**

5.	**एक दिन में संभावित परीक्षण** **Possible tests in a day**	:	• All Tests *Note: This section is for the guidance of BIS Certification Officers/ Technical Auditors of BIS Authorized Outside Surveillance Agencies (OSAs) during factory inspection to provide ready reference regarding the tests which can be witnessed during the inspection in the factory by the officer/ auditor.*

6. लाइसेंस का दायरा / Scope of the Licence:

"License is granted to use Standard Mark as per **IS 4215: 2026** with the following scope:

Name of the product		Needle Roller Bearings
Type of Needle Bearing		➢ Radial, cage guided needle bearings without inner rings (Type: NB) ➢ Radial, cage guided needle bearings with inner rings (Type: NBI) ➢ Full complement retained needles, radial needle bearings without inner rings (Type: RNA) ➢ Full complement retained needles, radial needle bearings with inner rings (Type: NA) ➢ Full complement retained needles, radial inverted needle bearings without outer rings (Type: NAW) ➢ Thrust needle bearings (Type: AX) ➢ Needle thrust bearings with additional thrust plate or washer (Type: AXZ) ➢ Separate thrust plates or washers for needle thrust bearings (Type: CP) ➢ Combined needle bearings (Type: RAX) ➢ Combined needle bearings with additional thrust plates or washers (Type: RAXZ) ➢ Inner rings for combined needle bearings (Type: IM)
Bearing bore diameter		From ____mm to up to and including _____mm
Material	**Inner ring**	(to be declared by the manufacturer)
	Outer ring	(to be declared by the manufacturer)
	Back face	(to be declared by the manufacturer)
	Thrust washers or plates	(to be declared by the manufacturer)
	Cage	(to be declared by the manufacturer)

ANNEX -A
Grouping Guidelines

1. Needle Roller Bearings as per IS 4215:2026 may be classified as below:

Type of Needle Bearing		➢ Radial, cage guided needle bearings without inner rings (Type: NB) ➢ Radial, cage guided needle bearings with inner rings (Type: NBI) ➢ Full complement retained needles, radial needle bearings without inner rings (Type: RNA) ➢ Full complement retained needles, radial needle bearings with inner rings (Type: NA) ➢ Full complement retained needles, radial inverted needle bearings without outer rings (Type: NAW) ➢ Thrust needle bearings (Type: AX) ➢ Needle thrust bearings with additional thrust plate or washer (Type: AXZ) ➢ Separate thrust plates or washers for needle thrust bearings (Type: CP) ➢ Combined needle bearings (Type: RAX) ➢ Combined needle bearings with additional thrust plates or washers (Type: RAXZ) ➢ Inner rings for combined needle bearings (Type: IM)
Bearing bore diameter		From ____mm to up to and including _____mm
Material	**Inner ring**	(to be declared by the manufacturer)
	Outer ring	(to be declared by the manufacturer)
	Back face	(to be declared by the manufacturer)
	Thrust washers or plates	(to be declared by the manufacturer)
	Cage	(to be declared by the manufacturer)

2. Further, Needle Roller Bearings are grouped based on the Needle Bearing type, as follows:

Group	**Type of Needle Bearing (in ascending order of stringency)**
Group I	➢ Radial, cage guided needle bearings without inner rings (Type: NB) ➢ Radial, cage guided needle bearings with inner rings (Type: NBI)
Group II	➢ Full complement retained needles, radial needle bearings without inner rings (Type: RNA) ➢ Full complement retained needles, radial needle bearings with inner rings (Type: NA) ➢ Full complement retained needles, radial inverted needle bearings without outer rings (Type: NAW)
Group III	➢ Separate thrust plates or washers for needle thrust bearings (Type: CP) ➢ Thrust needle bearings (Type: AX) ➢ Needle thrust bearings with additional thrust plate or washer (Type: AXZ)
Group IV	➢ Inner rings for combined needle bearings (Type: IM) ➢ Combined needle bearings (Type: RAX) ➢ Combined needle bearings with additional thrust plates or washers (Type: RAXZ)

3. Also, Needle Roller Bearings are grouped based on the Bearing bore diameter, as follows:

Size Group	**Nominal Size for Bearing Bore Diameter**
Size Group 1	Upto and including 50 mm
Size Group 2	Above 50 mm to Upto and including 100 mm
Size Group 3	All others above 100 mm

4. Based on the above classification and grouping, following grouping guidelines shall be followed for considering Grant of Licence (GoL)/Change in Scope of Licence (CSoL):
   - Samples of most stringent type of Needle Roller Bearing in each group defined in Sl. No. 2 above shall be tested, to cover all types of Needle Roller Bearing in that group.
   - Samples of Needle Roller Bearings for each type of material (for inner ring, outer ring, back face, thrust washers or plates) shall be tested separately.
   - Samples of Needle Roller Bearings of any bearing bore diameter from each of the size group defined in Sl. No. 3 above, for any of bearing outside diameter and width shall be tested to cover all other bearing bore diameter in that group. However, it shall be ensured that bearing of largest nominal dia for which the firm intends to take the licence is tested. For example, if a manufacturer intends to cover Needle Roller bearings upto bearing bore diameter of 150 mm, Needle Roller bearing of any bearing bore diameter from Size Group 1 & 2 shall be tested and largest bearing bore diameter (i.e) 150 mm shall be tested to cover the entire range.

5. The Firm shall declare all the designations of Needle Roller bearings intended to be covered in the Licence. The Scope of Licence may be restricted based on the Manufacturing and testing capabilities of the Manufacturer.

6. During the operation of the Licence, BO shall ensure that all the varieties covered in the Licence are tested in rotation, to the extent possible.

   Note: Manufacturer shall submit the following:
   a) Hardness requirement, if any special heat treatment is done as per Cl. 6 of IS 4215:2026

ANNEX- B

List of Test Equipments

(Indicative List, For Guidance Only)

Sl. No.	Cl. Ref.	Tests used in with Clause Reference	Test Equipment
1	4	Needle Roller	Please refer Product Manual for IS 4217
2	5	Material	Spectrometer
3	6	Hardness	Hardness Tester Sample preparation tools
4	7 Table 1 to Table 12	Dimensions and Tolerances	Coordinate Measuring Machine Comparator Dial Gauge with master Bore Air Gauge Vernier Caliper Dial Gauge Height Gauge
5	9.1	Workmanship and Finish	Microscope
6	9.2	Surface Roughness	Surface Roughness Tester

The above list is indicative only and may not be treated as exhaustive.

ANNEX C
Scheme of Inspection and Testing

1. QUALITY ASSURANCE PLAN

1.1 It is expected that during operation of BIS licence manufacturers will implement a Quality Assurance Plan (QAP) i.e. a plan of regular testing and in-process controls, designed to ensure that the product bearing the Standard Mark conforms to all requirements of the Indian Standard.

1.2 The manufacturers shall define a Quality Assurance Plan (QAP) defining the control unit (i.e. lot/batch etc.), the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and declare the arrangement for testing i.e. whether in-house or sub-contracting/ sharing for each applicable test and submit the same to BIS Branch Office for information. The manufacturer shall comply with the QAP and maintain test records in accordance with para 2.1.

1.3 Recommended Levels of Control/ Control Unit:

1.3.1 For the guidance of manufacturers, the recommended definition of control unit is: *entire quantity of Needle Roller Bearings of same type and same nominal bearing bore diameter, manufactured in a day under similar process condition from the same consignment of raw materials* shall constitute a control unit.

1.3.2 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in Table 1. Manufacturer has the discretion of declaring their own levels of control or accept the levels of control given in this document.

1.3.3 The manufacturer shall ensure inspection and testing as per the Quality Assurance Plan submitted by them on the whole production of the factory which is covered by this plan.

1.4 However, all manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard.

2. ENSURING COMPLIANCE THROUGH TESTING

The manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard for which they may have in-house test facilities. However, there is no obligation to maintain in-house laboratory. Licensee may use alternative arrangements for tests of the production as per the declared QAP. Various alternatives are available for operation of BIS certification as given below and the relevant guidelines for availing such relaxations by the manufacturers, as amended from time to time, are to be referred:

i) Shared testing resources like common facility,
ii) Cluster based testing facility,
iii) Sub-contracting to outside laboratories which may either be:
a) BIS recognised/ empanelled laboratories, or
b) Any accredited laboratory as per ISO/IEC 17025

2.1 Test Records- The manufacturers shall maintain test records for the tests carried out (either in-house or at a sub-contracted or at shared test facility) to establish conformity of the product to the Standard for operation of licence. For the tests being subcontracted or conducted at a shared test facility, test results issued by the laboratories or test facilities, shall be made available for inspection by BIS.

3. PACKING AND MARKING

The Standard Mark as given in the Schedule of the licence shall be incorporated legibly and indelibly on the packaging of the Needle Roller Bearings provided always that the Needle Roller Bearings so marked conforms to each requirement of the specification.

3.1 Packing and Marking of Needle Roller Bearings shall be done as per Cl. 10 & Cl. 11 of IS 4215:2026 respectively.

3.2 **Additional Marking requirements**: The Needle Roller Bearings shall also be marked with the following additional requirement on its packaging:

a) "For BIS certification details please visit www.bis.gov.in"

4. REJECTION

The production which conforms to the Indian Standard and covered under the scope of this licence shall be marked with the Standard Mark. Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act, 2016.

TABLE-1

(Recommended Levels of Control by BIS- for Guidance Only)

(1)				(2)		
Test Details				**Levels of Control**		
Cl.	**Requirement**	**Test Methods**		**No. of Sample**	**Frequency**	**Remarks**
		Clause	**Reference**			
4	Needle Roller		IS 4217	Each Consignment		No further testing is required if accompanied with the Test Certificate or ISI marked.
5	Materials	5	IS 4215	Each Consignment		No further testing is required if accompanied with the Test Certificate or ISI marked.
6	Hardness		IS 1501 (Part 1)/ IS 1586 (Part 1)	01	Each Control Unit	
7	Dimensions and Tolerances	7 Table 1 to Table 12	IS 4215	05	Each Control Unit	Firm to also have adequate in-process controls to check compliance of this parameter as per the tolerances given in the Indian Standard. Appropriate records shall be maintained by the manufacturer for evidence of conformity.
9.1	Workmanship and Finish	9.1	IS 4215	Each needle roller		
9.2	Surface Roughness	9.2	IS 4215	01	Each Control Unit	