



उत्पाद मैनुअल
प्लेन बेयरिंग – थ्रस्ट वॉशर
भाग 2: दबाए हुए द्विधात्वकीय अर्ध थ्रस्ट वॉशर – विशेषताएं एवं छूट
आईएस 9764 (PART 2): 2022 के अनुसार

PRODUCT MANUAL
PLAIN BEARINGS – THRUST WASHERS
PART 2 PRESSED BIMETALLIC HALF THRUST WASHERS — FEATURES AND TOLERANCES
According to IS 9764 (PART 2): 2022

यह उत्पाद नियमावली सभी क्षेत्रीय/शाखा कार्यालयों और लाइसेंसधारियों द्वारा विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम, 2018 की योजना-1 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 9764 (Part 2): 2022
	शीर्षक / Title	:	Plain Bearings – Thrust Washers Part 2 Pressed Bimetallic Half Thrust Washers — Features and Tolerances
	संशोधनों की संख्या No. of amendments	:	0
2.	नमूनाकरण दिशानिर्देश / Sampling Guidelines		
a)	कच्चा माल Raw material	:	- Thrust washer lining (as per Table 12) - Steel backing (as per Table 13) <i>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.</i>
b)	समूहीकरण दिशानिर्देश Grouping Guidelines	:	Please refer ANNEX – A
c)	नमूने का परिमाण Sample Quantity	:	50 nos.
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: Inside diameter <i>Note: Apart from the above, any other requirements/ parameters may also be declared as per the standard, as applicable.</i>
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 <i>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.</i>
6.	लाइसेंस का दायरा / Scope of the Licence:		
“License is granted to use Standard Mark as per IS 9764 (Part 2) : 2022 with the following scope:			
Name of the product		Plain Bearings – Thrust Washers Part 2 Pressed Bimetallic Half Thrust Washers	
Outside diameter		From ____ mm to up to and including ____ mm	
Thickness		From ____ mm to up to and including ____ mm	
Lug		With/Without Lug	
Material	Thrust washer lining	(to be declared by the manufacturer)	
	Steel backing	(to be declared by the manufacturer)	

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ANNEX -A
Grouping Guidelines

1. Plain Bearings – Thrust Washers Part 2 Pressed Bimetallic Half Thrust Washers as per IS 9764 (Part 2): 2022 may be classified as below:

Outside diameter		From ____mm to up to and including ____mm
Thickness		From ____mm to up to and including ____mm
Lug		With/Without Lug
Material	Thrust washer lining	(to be declared by the manufacturer)
	Steel backing	(to be declared by the manufacturer)

2. Based on the above classification, following grouping guidelines shall be followed for considering Grant of Licence (GoL)/Change in Scope of Licence (CSoL):
- Samples of Pressed Bimetallic Half Thrust Washers with the lowest outside diameter and the highest outside diameter, of any inside diameter and of any thickness shall be tested to cover the entire range of outside diameters for which the firm intends to obtain licence.
 - If samples of Pressed Bimetallic Half Thrust Washers with lug is tested, Pressed Bimetallic Half Thrust Washers without lug may also be covered.
 - Samples of Pressed Bimetallic Half Thrust Washers for each type of material (for Thrust washer lining and Steel backing) shall be tested separately.
3. The Firm shall declare all the designations of Pressed Bimetallic Half Thrust Washers intended to be covered in the Licence. The Scope of Licence may be restricted based on the Manufacturing and testing capabilities of the Manufacturer.
4. 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.

ANNEX- B
List of Test Equipments
(Indicative List, For Guidance Only)

Sl. No.	Cl. Ref.	Tests used in with Clause Reference	Test Equipment
1	6 Table 1 to Table 3	Diameters and Heights	Vernier Caliper Micrometer Dial Gauge Height Gauge Radius Gauge Angle Protractor
2	7 Table 4	Total Thickness	
3	8 Table 5 & Table 6	Locating Lug	
4	9 Table 7 & Table 8	Grooves	
5	10	Joint faces	
6	11 Table 9 to Table 10	Fillet radii and chamfers	
7	12 Table 11	Flatness	
8	14 Table 12 & Table 13	Material	Spectrometer Hardness Tester Sample preparation tools
9	15	Workmanship and Finish	Microscope

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 Pressed Bimetallic Half Thrust Washers of same outside diameter and same thickness, 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 Pressed Bimetallic Half Thrust Washers provided always that the Pressed Bimetallic Half Thrust Washers so marked conforms to each requirement of the specification.

3.1 Marking of Pressed Bimetallic Half Thrust Washers shall be done as per Cl. 16 & 17 of IS 9764 (Part 2):2022.

3.2 **Additional Marking requirements:** The Pressed Bimetallic Half Thrust Washers 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			
14	Material	Table 12 Table 13	IS 9764 (Part 2)	Each Consignment		No further testing is required if accompanied with the Test Certificate or ISI marked.
6	Diameters and Heights	Table 1 to Table 3	IS 9764 (Part 2)	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.
7	Total Thickness	Table 4	IS 9764 (Part 2)	05	Each Control Unit	
8	Locating Lug	Table 5 & Table 6	IS 9764 (Part 2)	05	Each Control Unit	
9	Grooves	Table 7 & Table 8	IS 9764 (Part 2)	05	Each Control Unit	
10	Joint faces	10	IS 9764 (Part 2)	05	Each Control Unit	
11	Fillet radii and chamfers	Table 9 to Table 10	IS 9764 (Part 2)	05	Each Control Unit	
12	Flatness	Table 11	IS 9764 (Part 2)	05	Each Control Unit	
15	Workmanship and Finish	15	IS 9764 (Part 2)	Each thrust washer		