



उत्पाद मैनुअल

भा. मा. 19409: 2025 के अनुसार

वातानुकूलन और प्रशीतन प्रयोजनों के लिए सर्विस वाल्व के लिए

दस्तावेज़ संख्या-पी एम/IS 19409/1/सितम्बर 2026

भारतीय मानक ब्यूरो की स्कीम-1 (अनुरूपता मूल्यांकन) विनियम, 2018 के तहत यह उत्पाद मैनुअल प्रमाणीकरण के प्रचालन में रीति और पारिश्रिता की सुसंगतता सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों और लाइसेंसी द्वारा संदर्भ सामग्री के रूप में उपयोग किया जाएगा। बीआईएस प्रमाणीकरण लाइसेंस/प्रमाणपत्र प्राप्त करने के इच्छुक भावी आवेदकों द्वारा भी इस दस्तावेज़ का उपयोग किया जा सकता है।

PRODUCT MANUAL FOR

**SERVICE VALVE FOR AIR CONDITIONING AND REFRIGERATION
PURPOSES**

ACCORDING TO IS 19409 : 2025

Document No. - PM/IS 19409/1/September 2026

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence 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 licence/certificate.

भारतीय मानक ब्यूरो

BUREAU OF INDIAN STANDARDS

मानक भवन, 9, बहादुर शाह ज़फ़र मार्ग

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PRODUCT MANUAL FOR SERVICE VALVE FOR AIR CONDITIONING AND REFRIGERATION PURPOSES

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1.	Product	:	IS 19409 : 2025
	Title	:	Service Valves for Air Conditioning and Refrigeration purposes
	No. of Amendments	:	Nil
2.	Sampling Guidelines:	:	
a)	Raw material	:	Valve Core - As per Cl. 5.7.
b)	Grouping guidelines	:	Please refer ANNEX – A
c)	Sample Size	:	5 Pcs of each variety selected for testing
3.	List of Test Equipment	:	Please refer ANNEX – B
4.	Scheme of Inspection and Testing	:	Please refer ANNEX – C
5.	Possible tests in a day	:	Construction (Cl. 4), Fittings and Connections (Cl. 5.5), Workmanship (Cl. 5.2), Dimensions (Cl. 5.6), Interchangeability (Cl. 5.7.3), Internal test (Cl. 6.1), External test (Cl. 6.2), Valve flow rate test (Cl. 6.3), Proof pressure test (Cl. 6.4), Pressure strength test (Cl. 6.5), Valve stem open/close test (Cl. 6.7), Thermal cycling test (Cl. 6.10), Drop test (Cl. 6.15)
6.	Scope of the Licence	:	Please refer ANNEX – D
7.	Parameters to be declared for testing	:	Type of valve (2 way/3-way), Design pressure, Size designation, Flow coefficient, Dimensions of fittings and connections as applicable

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ANNEX – A
Grouping Guidelines

1. Service Valves for Air Conditioning and Refrigeration purposes as per IS 19409: 2025 shall be grouped based on the following:

a) **Type of Valve -**

- Two-way valve
- Three-way valve

b) Design pressure- *as per Cl. 3.3*

c) Size designation- *as per Cl. 3.10*

2. **The guidelines given below shall be followed for Grant of Licence/Change in Scope of Licence:**

a) Sample of each type of Valve desired to be covered in the scope shall be tested separately.

b) Sample of valve of each design pressure desired to be covered in the scope shall be tested separately.

b) For each type and design pressure, testing shall be carried out on samples of the **lowest and highest size designations**. Such testing shall be considered representative of, and shall cover, **all intermediate size designations**, including the lowest and highest sizes tested, for that type and design pressure.

3. The Firm shall declare the varieties intended to be covered in the Licence. The Scope of Licence may be restricted based on the manufacturing 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 Equipment

Indicative list of major test equipment required to test as per the Indian Standard (For guidance only)

Sl. No.	Tests used in with Clause Reference	Test Equipment
1.	Dimensional Check, Cl. 5, Annex-B	Measuring Scale Vernier Caliper Micrometer Height gauge Plug and Ring gauges of applicable dimensions Radius gauge Thickness gauge/Dial indicator
2.	Internal test (Cl. 6.1), External test (Cl. 6.2),	Leak test rig/set up with necessary attachments
3.	Valve flow rate test (Cl. 6.3)	Test set up as per Cl. 6.3
4.	Proof pressure test (Cl. 6.4), Pressure strength test (Cl. 6.5)	Test rig/set up with necessary attachments
5.	fatigue test (Cl. 6.6)	Test set up as per Cl. 6.6
6.	Valve stem open/close test (Cl. 6.7),	Test set up as per Cl. 6.7
7.	Low temp test (Cl. 6.8), High temp. test (Cl. 6.9), Thermal cycling test (Cl. 6.10)	Deep freezer, Oven
8.	Core endurance test (Cl. 6.11)	Test set up as per Cl. 6.11
9.	Vibration test (Cl. 6.12)	Test set up as per Cl. 6.11
10	Stress cracking test (Cl. 6.13)	Ammonia solution
11	Refrigerant compatibility test (Cl. 6.14)	Oil-refrigerant mixture as specified by OEM, Set up as per Cl. 6.14
12	Drop test/Shock test (Cl. 6.15)	Test set up as per Cl. 6.15

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 subcontracting/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/BATCH:

1.3.1 Control Unit: For the guidance of manufacturers, the recommended definition of Control Unit is the quantity of valves of the same Type, same design pressure and size designation, manufactured from the same lot/consignment of raw material and components and following the same manufacturing process (forging, machining, assembly etc.), manufactured in a day.

1.3.2 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in Table 1. Manufacturers have the discretion of declaring their own levels of control or alternatively, manufacturer has the option of adherence to the quality plan as per levels of control recommended in column 3 of Table 1. However, all manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard.

1.3.3 The manufacturer shall ensure inspection and testing as per the Quality Assurance Plan submitted for the whole production.

2. ENSURING COMPLIANCE THROUGH TESTING

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. LABELLING, PACKING AND MARKING

Labelling, Packing and Marking shall be done as per IS 19409 : 2025. The Standard Mark as given in the Schedule of the licence shall be incorporated legibly and indelibly on each product, provided the product conforms to all applicable requirements of the Indian Standard.

3.1 Additional Marking Requirements: Additionally, the following shall also be marked on product or package:

- 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- For guidance only)

(1)			(2)		
Test Details			Levels of Control		
Clause	Requirement	Test Method Clause Reference	No. of Sample	Frequency	Remarks
5	Material	IS 19409	Representative samples	Each Consignment	Manufacturer shall submit detailed drawing of each variety of hydraulic jack with details of material, heat treatment/hardness etc. in accordance with Cl. 7.1.2 of IS 4552 (Part 2): 1993 and conformity to the same shall be ensured. No further testing is required if accompanied with Test Certificate of the supplier; peening/plugging not permitted for reclaiming
4	Construction requirements	IS 19409	Firm should exercise adequate control so that whole production should meet the requirements. Records shall be maintained		
5.5, 5.6	Dimensional Check	IS 19409			
6.1	Internal leak test	IS 19409	Each valve		
6.2	External leak test	IS 19409	Each valve		
6.3	Valve flow rate Test	IS 19409	One	Once in a month	One sample of valve of each type, design pressure and size manufactured during the period, shall be tested
6.4	Proof pressure Test	IS 19409	One	Once in six months	One sample of valve of each type, design prerssure and size manufactured during the period, shall be tested

6.5	Pressure strength Test	IS 19409	One	Once in a month	One sample of valve of each type, design pressure and size manufactured during the period, shall be tested
6.6	Fatigue Test	IS 19409	One	Once in a year	One sample of valve of each type, design pressure and size manufactured during the period, shall be tested
6.7	Valve stem open/close Test	IS 19409	One	Once in a month	One sample of valve of each type, design pressure and size manufactured during the period, shall be tested
6.8	Low temperature Test	IS 19409	One	Once in six months	One sample of valve of each type, design pressure and size manufactured during the period, shall be tested
6.9	High temperature test	IS 19409	One	Once in six months	One sample of valve of each type, design pressure and size manufactured during the period, shall be tested
6.10	Thermal cycling test	IS 19409	One	Once in six months	One sample of valve of each type, design pressure and size manufactured during the period, shall be tested
6.11	Core endurance test	IS 19409	One	Once in six months	One sample of valve of each size manufactured during the period, shall be tested
6.12	Vibration test	IS 19409	One	Once in six months	One sample of valve of each type, design pressure and size manufactured during the period, shall be tested
6.13	Stress cracking test	IS 19409	One	Once in six months	One sample of valve of each type, and size manufactured during the period, shall be tested
6.14	Refrigerant compatibility test	IS 19409	One	Once in a year	One sample of valve of each type, design pressure and size manufactured during the period, shall be tested
6.15	Drop test	IS 19409	One	Once in six months	One sample of valve of each type, design pressure and size manufactured during the period, shall be tested

ANNEX – D
Scope of Licence

“Licence is granted to use Standard Mark as per IS 19409 : 2025 with the following scope:

Name of the product	Service Valves for Air Conditioning and Refrigeration purposes
Type of valve (Two-way/Three-way)	
Size designation	
Design pressure, in MPa or Kgf/Cm2	