



**PRODUCT MANUAL FOR
PIPE WRENCHES (HEAVY DUTY)
ACCORDING TO IS 4003 (Part 2): 1986**

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.

1.	Product	:	IS 4003 (Part 2): 1986
	Title	:	Pipe Wrenches (Heavy Duty)
	No. of Amendments	:	2
2.	Sampling Guidelines:		
a)	Raw material	:	As per clause 4 of IS 4003 (Part 2): 1986
b)	Grouping guidelines	:	Please refer ANNEX – A
c)	Sample Size	:	Two Pipe Wrenches
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	:	All Tests
6.	Scope of the Licence:		
	“Licence is granted to use Standard Mark as per IS 4003 (Part 2): 1986 with the following scope:		
	Name of the product	Pipe Wrenches (Heavy Duty)	
	Nominal Size		

ANNEX A

Grouping Guidelines

1. IS 4003 (Part 2) covers Heavy Duty Pipe Wrenches of the following Nominal Sizes:
 - 200 mm, 250 mm, 350 mm, 450 mm, 600 mm, 900 mm, 1200 mm
2. Considering the above, the grouping guidelines given below shall be followed for GoL/CSoL:
 - Sample of lowest and highest size shall be tested for all requirements to cover all sizes in that size range.
3. The Firm shall declare the varieties of Wrenches 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 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***Major test equipment required to test as per the Indian Standard*

Sl. No.	Tests used in with Clause Reference	Test Equipment
1	Dimension (Clause 3)	(i) Measuring Tape (ii) Micro Meter (iii) Scale (iv) Vernier Calliper
2	Hardness (Clause 5)	(i) Vickers Hardness Tester (ii) Suitable Polisher
3	Static Load Test (Clause 11.1)	Test Rig for Static Load Test

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

ANNEX C

Scheme of Inspection And Testing

1. LABORATORY - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.

1.1 The manufacturer shall prepare a calibration plan for the test equipments.

2. TEST RECORDS – The manufacturer shall maintain test records for the tests carried out to establish conformity.

3. LABELLING AND MARKING – As per the requirement of IS 4003(Part 2): 1986.

4. CONTROL UNIT – Pipe wrenches of each nominal size manufactured in a day from the same consignment of raw materials shall constitute a control unit.

5. LEVELS OF CONTROL - The tests as indicated in column 1 of Table 1 and the levels of control in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above.

5.1 All the production which conforms to the Indian Standards and covered by the licence should be marked with Standard Mark.

6. REJECTIONS – 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

(1)			(2)	(3)			
Test Details			Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control			
Cl.	Requirement	Test Method		No. of Sample	Frequency	Remarks	
		Clause	Reference				
4	Material	4	IS 4003 (Part 2)	S	-	-	Please see Note 1
3	Dimensions	3, Table 1		R	One	Each control unit	-
5	Hardness	5		R	One component each	One lot of each component of each size heat- treated at a time	-
6	Manufacture	6.1 to 6.5		R	One	Each Control unit	-
7	Workmanship and Finish	7		-	Each Wrench	-	-
8	Operation	8		R	Every Wrench	-	-
11.1	Static Load Test	11.1		R	One	Each control unit	-
13	Packing	13		R	Every piece	-	-

Note1: Steel wire (IS 4454-Part 1) shall be ISI marked. For other materials, no further testing is required if accompanied with test certificate or ISI marked.

Note-2: Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled by the Bureau.

Note-3: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control unit/batch/lot and submit his own levels of control in column 3 with proper justification for approval by BO Head.