



**PRODUCT MANUAL
FOR
HAND-OPERATED UNIVERSAL GEARLESS PULLING AND
LIFTING MACHINES
ACCORDING TO IS 5604:1984**

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 5604: 2025
	Title	:	Hand operated Universal Gearless Pulling and Lifting Machines
	No. of Amendments	:	Nil
2.	Sampling Guidelines:		
a)	Raw material	:	As per Cl 4 of IS 5604 Bearings as per Cl. 6.4 of IS 5604
b)	Grouping guidelines	:	Please refer ANNEX-A
c)	Sample Size	:	2 Machines
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:		
	(i) Proof loading (Clause 10.1) (ii) Operational test (Clause 10.2) (iii) Break Load Testing , if required by purchaser (Clause 10.3) (iv) Examination (Clause 10.4)		
6.	Scope of the Licence:		
	“Licence is granted to use Standard Mark as per IS 5604: 1984 with the following scope:		
	Name of the product	Hand-Operated Universal Gearless Pulling and Lifting Machine	
	Lifting capacity of machine in Tonnes		

ANNEX A

Grouping Guidelines

1. IS 5604: 2025 covers Hand-Operated Universal Gearless Pulling and Lifting Machines with the following lifting capacities:
0.8 T, 1 T, 1.6 T, 2 T, 3.2T, 5 T
2. One sample of machine with highest lifting capacity shall be tested to cover all the machines with capacities up to and including the capacity tested.
3. The Firm shall declare the varieties of machines they intend to cover 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 capacities 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.	Proof Load test (Clause 10.1)	Load cell of desired capacity
2.	Operational test (Clause 10.2)	Load cell of desired capacity
3.	Break load Testing(Clause 10.3)	Load testing machine
4.	Other Dimensional measurements (Clause 6)	Vernier caliper, Micrometer, Steel tape, Dial indicator, Digimatic caliper, Dial Bore gauge

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 manufacturers (licensees/applicants) will implement a Quality Assurance Plan 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 defining the control unit i.e. Batch and the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and submit the same to BIS Branch Office for information. The manufacturer shall comply with the same and maintain test records in accordance with para 2.4 below.

1.3 RECOMMENDED LEVELS OF CONTROL:

1.3.1 **Levels of Control:** For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in **Table 1**.

1.3.2 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. Alternatively, the manufacturer has the option of adherence to the quality plan as per levels of control recommended in column 3 of Table 1.

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

2. ENSURING COMPLIANCE THROUGH TESTING- It is expected that manufacturers (licensees/applicants) will establish a suitably equipped and staffed in-house laboratory (In house testing facility) for testing at least those parameters of the Indian Standard which require routine testing for ensuring quality of the product. This includes in-process controls as may be defined and put in place by the manufacturer, and testing parameters/requirements which can only be performed in the factory.

2.1 For the guidance of manufacturers, Table 1 giving the recommended levels of control is given below. Column 2 of Table 1 indicates routine tests where test equipment is required in-house as “R” or other tests which can be sub-contracted as “S”. Subcontracting is permitted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.2 For MSME manufacturers, the requirement of maintaining a laboratory/in-house testing facility for routine tests (indicated as “R” in Column 2 of Table 1) also is optional.

2.2.1 MSME manufacturers may utilize common cluster based facilities as per guidelines for the utilization of cluster based test facilities by MSMEs or the provisions of Sharing of testing facilities or get testing done from BIS recognized/empaneled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.3 Large Scale manufacturers shall maintain an in-house laboratory equipped at least with test facilities for routine tests (indicated as “R” in Column 2 of Table 1), where different tests given in the specification shall be carried out in accordance with the method given in the specification. They shall also implement a calibration plan for the in-house test equipment.

2.3.1 Alternatively, in lieu of an in-house laboratory, large scale manufacturers can also utilize the provisions of Sharing of testing facilities as per the Guidelines for Grant of Licence available on BIS website www.bis.gov.in. (Under Conformity Assessment>Product Certification Process). Even for subcontracted tests, provisions for sharing of testing facilities can be utilized.

2.4 TEST RECORDS- The manufacturers maintaining an in-house laboratory or utilizing common cluster based facilities or shared test facilities shall maintain test records for the tests carried out to establish conformity. For the tests being subcontracted to BIS recognized/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025, test reports issued by the laboratories shall be available for inspection by BIS.

3. LABELLING AND MARKING – As per the requirement of IS 5604: 2025. The Standard Mark, as given in the Schedule of the licence, shall be marked on each Machine provided always that the product thus marked conforms to all the requirement of the specification. In addition, the licence no. CM/L-_____ and details of BIS website shall be marked at an appropriate place on product or package as follows: “For details of BIS certification please visit www.bis.gov.in”.

4. REJECTION - All the production which conforms to the Indian Standard and covered under scope of the licence shall be marked with 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		
Cl.	Requirement	Test Methods		No. of samples	Frequency	Remarks
		Clause	Reference			
4	MATERIAL			One	Each consignment	No further testing is required if accompanied with test certificate or ISI marked.
	Steel Bars, plates and sections	4.1	IS 5604 IS 2062			
	Steel forgings	4.1	IS 5604 IS 2004 IS 2611 IS 4367			
	Aluminium and Aluminum alloys	4.1	IS 5604 IS 617			
	Coil springs	4.1	IS 5604 IS 4454 (Pt 1)			

	Hooks	4.1	IS 15560			
	Wire ropes	4.1	IS 2266	One	Each consignment	No further testing is required if accompanied with test certificate or ISI marked.
	Jaws	4.2	IS 5604			
6	CONSTRUCTION and WORKMANSHIP					
6.1	Machine	6.1	IS 5604	Each unit, as applicable		One out of every 50 machines produced shall be checked for its factor of safety
6.4	Bearings					
6.4.1	Ball and Roller Bearings		IS 5669 IS 5692	5 bearings	Each Consignment	No further testing is required if accompanied with test certificate or ISI marked.
6.4.2	Plain bearing	6.4.2	IS 3832	5 bearings	Each Consignment	
6.5	Wire Rope		IS 2266	One	Each consignment	
6.6	Heat treatment	6.6	IS 5604	Firm should exercise adequate control so that whole production should meet the requirements. Records shall be maintained.		
6.7	Rust prevention	6.7	IS 5604			
6.8	Weight	6.8	IS 5604			

8.4	Back slippage	8.4	IS 5604	Each machine	
10	TESTS				
10.1	Proof loading	10.1	IS 5604	Each Machine	
10.2	Operational test	10.2	IS 5604	Each machine	
10.3	Break load test	10.3	IS 5604	One	To be done if desired by the purchaser The test shall be conducted at the time of initial approval of the machine or when there is a change in the material or design of the components of the machine.
10.4	Examination	10.4	IS 5604	Each machine	