



**PRODUCT MANUAL FOR
ENGINE MONOSET PUMPS FOR CLEAR, COLD,
FRESH WATER FOR AGRICULTURAL PURPOSES
ACCORDING TO IS 11501:1986**

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 11501:1986
	Title	:	Engine Monoset Pumps for Clear, Cold, Fresh Water for Agricultural Purposes.
	No. of Amendments	:	3
2.	Sampling Guidelines:		
a)	Raw material	:	Gaskets, Seals and Packing – IS 5120
b)	Grouping guidelines	:	Each Type of Engine Monoset Pump is to be tested for GOL and CSoL
c)	Sample Size	:	One Pumpset for all tests
3.	List of Test Equipment	:	Please refer ANNEX – A
4.	Scheme of Inspection and Testing	:	Please refer ANNEX – B
5.	Possible tests in a day	:	All tests
6.	Scope of the Licence	:	Please refer ANNEX – C

ANNEX A**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	Pump Testing (Clause 11.3)	(i) Delivery & Suction Pipe Set with Pressure & Suction Controlling Valve etc. (ii) Flow meter (iii) Fuel Supply Arrangement (iv) Oil Storage Tank (v) Power Panel (vi) Pressure Gauge (vii) Suction Gauge (viii) Tachometer (ix) Water Collection tank
2	General Requirements (Clause 10)	(i) Bore Gauge with Dial Indicator (ii) Fuel Consumption Check with Burette Set (iii) Hardness Tester (iv) Hydrometer (v) Inspection Table (vi) Micrometer (vii) Static Balancing Machine (viii) Steel Rule (ix) Stop Watch (x) Surface Plate (xi) Vernier Caliper

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

ANNEX B

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 11501:1986.

4. CONTROL UNIT – All pumps of same input, manufactured under essentially similar conditions, in a fortnight 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				
5	Materials of Construction	5.1, 5.2	IS 11501	Conformity to the relevant Indian Standard may be established			
11.3	Pumpsets						
11.3.1, 15.2	Performance Tests and Guarantee of Performance (For Total Head & Discharge Rate measurement of different Heads)	4, 5, 6, 7	IS 11346	R	As per Table 2 below	Each control unit	Please refer to Note 3 below.
11.3.2, 11.4, 11.5	Fuel Consumption Test	11.3.2, 11.4, 11.5	IS 11501	R	As per Table 2 below	Each Lot	Please refer to Note 3 below
10.1	General Requirements	10.1	IS 5120	R	Each Monoset Pump	--	Please refer to Note 3 below.
10.2	Hydraulic Pressure Test, Pump Casing	10.2	IS 11501	R	Each Casing	--	Please refer to Note 3 below.
10.3	Balancing of Impeller	10.3	IS 11501	R	Each Impeller	--	Please refer to Note 3 below.
11.1	Engine Testing	As per IS 11170 and its SIT		S	Each Engine	--	No testing is required if the diesel engine is ISI marked.

Note-1: Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled by the Bureau.

Note-2: The control unit and levels of control as decided by the Bureau are obligatory, to which the licensee shall comply with.

Note-3: If there is a failure, frequency of inspection shall be each sample, till the time three consecutive samples pass. For every failure, appropriate steps shall be taken for rectifying the cause of the defect in subsequent samples and record of the same is maintained.

Table 2
Levels of Sampling

No of Pumps in the Lot	No of Pumps Selected	Acceptance Number
Upto 90	5	0
91 to 150	8	0
151 to 280	13	0
281 to 500	20	1
501 to 1200	32	1
1201 and above	50	1

ANNEX C

Scope of Licence

Licence is granted to use Standard Mark as per IS 11501:1986 with the following scope:													
Name of the Product		Engine Monoset Pumps for Clear, Cold, Fresh Water for Agricultural Purposes											
Details		As given below:											
Sr. No	Model	Size (mm)	Head (m)	Fuel Consumption (g/hr)	Capacity (lps)	Rated Speed (rpm)	Rating (kW/HP)	Max power Cons. (kW)	Priming Type	Operating Head Range in mt.		Capacity Range (lps)	
										Min.	Max.	Min.	Max.