



**CROP PROTECTION EQUIPMENT- HAND OPERATED  
COMPRESSION KANPSACK SPRAYER  
ACCORDING TO IS 1970:1995**

*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.	<b>Product</b>	:	IS 1970 : 1995
	<b>Title</b>	:	CROP PROTECTION EQUIPMENT - HAND OPERATED COMPRESSION KANPSACK SPRAYER
	<b>No. of Amendments</b>	:	01
2.	<b>Sampling Guidelines:</b>		
a)	<b>Raw material</b>	:	Table 1 (Clause 4.1)
b)	<b>Grouping guidelines</b>	:	NIL
c)	<b>Sample Size</b>	:	1 No.
3.	<b>List of Test Equipment</b>	:	Please refer ANNEX – <a href="#">A</a>
4.	<b>Scheme of Inspection and Testing</b>	:	Please refer ANNEX – <a href="#">B</a>
5.	<b>Possible tests in a day :</b>		
	(i) Performance tests (ii) Constructional requirements (iii) Dimensions		
6.	<b>Scope of the Licence :</b>		

	“Licence is granted to use Standard Mark as per IS 1970 : 1995 with the following scope:
Name of the product	CROP PROTECTION EQUIPMENT-HAND OPERATED COMPRESSION KANPSACK SPRAYER

**List of testing Equipments (Annex-A)**

<b>Sl. No</b>	<b>Test</b>	<b>Clause</b>	<b>Appratus</b>
1.	Performance	5.1	Pressure Guage
2.	Tank	6.1.1	Measuring Cylinder
3.	Skirt Pneumatic Test	6.1.2 (7.1 of IS 10134)	Pressure Guage Water Tank
4.	Hydraulic Test	6.1.2 (7.1.2 of IS 10134)	Pressure Guage Timer
5.	Test for tank & Skirt Impact	6.1.2 (7.10 of IS 10134)	Pressure Guage Scale Angle Protector Teak/Hard Wood platform
6.	Test for Tank Fatigue	6.1.2 (7.11 of IS 10134)	Test arrangement clause 7.11 of IS 10134(Including Compress & Counter)
7.	Straps	6.2 (7.3 IS 10134)	Scale
8.	Filler Ring & Trainer	6.3	Vernier Caliper Screw Gauge
9.	Pumps Cylinder	6.4	Vernier Caliper
10.	Piston	6.5	Vernier Caliper
11.	Piston Rod	6.6	Vermier Caliper
12.	Handle	6.7	Vermier Caliper
13.	Valve Assembly	6.8 (7.9 of IS 10134)	Hydraulic Pump Press Guage
14.	Threaded Connection	6.10 (6.5 of IS 3652)	Thread Guages
15.	Discharge outlet	6.11	Vernier Caliper
16.	Gasket	6.12 (7.4 of IS 10134)	Kerosene Benzene Toulene Xylene

			Air Conditioner
17.	Hose Connection	6.13.2	Pressure Gauge
18.	Cutt Off Device & Lance	-	Vernier Caliper Guages Torque Wrench Measuring Tape Test apparatus as per Annex-C (Cl. C-91), Water dispersible power, stop watch, Spray nozzle, Compressor
19.	Nozzle	6.15 (IS 3652:1995 Annex F)	Pressure Gauge Discharge Rate Apparatus Angle Protector Screw Gauge Measuring Scale Patternator for Spray Distribution Test Test Rig for Measuring Nozzle Spray
20.	Adopter & Cap	6.16	Gauges
21.	Height	6.17	Measuring Tape
22.	Mass	6.18	Weighting Balance

Note: 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 equipment.

**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 1970: 1995

**4. CONTROL UNIT** – For the purpose of this scheme, all hand sprayers produced in one day shall constitute one 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** Each consignment of raw material for any component/parts should be accompanied by a test certificate guaranteeing its conformity to clause 4 of the specification. Alternatively, the manufacturer shall make necessary arrangement for getting sample(s) from each consignment of the raw material received tested for its conformity to clause 4 of the specification and use it if found satisfactory.

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

**6. HYGIENIC CONDITIONS** – Wherever applicable, hygienic conditions shall be complied in day to day production and quality control activities. Schedule for each activity for this purpose shall be displayed prominently in the factory premises and records of compliance shall be maintained.

**7. 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	Performance Test	6.3	IS10134:1994	R	Each pump	.	
6.1.1	Table Leakage test			R			
	a) Pneumatic test	7.1	-do-		Each tank		
	b) Hydraulic test	7.10	-do-		Three	Each control unit	
	c) Tank Impact Drop Test	7.11	-do-		One	Every 7th control unit	
						**See remarks below	
6.2.1	Strap drop test	7.3	-do-	R	One	Every 100 straps	In case of failure, two more samples shall be drawn and tested. The lot shall be used, if further failure do not occur.
6.4.1	Pump cylinder test	7.1	-do-	R	Each pump cylinder		
6.8	Valve assembly test	7.9	-do-	R	Each valve assembly		
6.12	Gasket test	7.4	-do-	R	Two	Each consignment of	In case of failure, two more samples shall be dawn & tested. The lot

						gasket received	shall be used if further failure do not occur.
6.13.2	Hose & hose connection test	7.2	-do-	R	Each hose connection		
6.14	Cut off device a) Test for lever actuation & strength b) Leakage & reliability test	Annex C C-6 & C-8 C-9	IS 3652:1995 -do- -do-	S	Each cut off device  One		In case these are ISI marked there is no need to test again for these requirements.
6.14	Test for lance	Annex D	IS 3652:1995	R	Each lance		
6.15	Performance Test for nozzle	Annex F		R	Each nozzle		
6.19	Endurance test a) Type test a) b) Routine test	8.2 8.2	IS 10134:1982	R	One	Every 20th control unit	
6.18	Mass of sprayer	6.18	IS 1970:1995	R	One	Each lot	
6.1	Tank & Skirt	6.1	IS 1970:1995	R	Each tank		
6.2	Straps	6.2	-do-	R	Two	Each consignment	
6.3	Filler ring	6.3 & 6.3.1	-do-	R	Every tenth sprayer		In case of failure, two more samples shall be tested and lot marked if both passed.
6.3.2	Strainer	6.3.2	-do-	R	-do-		-do-

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6.4	Diameter of pump cylinder	6.4	-do-	R	-do-		-do-
6.5 & 6.6	Piston, piston spreader, piston rod, buffer & guide	6.5, 6.5.1, 6.6, 6.6.1 & 6.6.2	-do-	R	Every tenth sprayer		-do-
6.7	Handle & handle locking device	6.7, 6.7.1	-do-	R	-do-		-do-
7.3.9	clean-out port	7.3.9	-do-	R	-do-		-do-
6.9, 6.10 & 6.11	Discharge pipe, Threaded Connections discharge outlet	6.9, 6.10 & 6.11	-do-	R	Each piece		
6.13	Delivery hose	6.13	-do-	R	Every tenth sprayer		
6.13.1	Hose connection	6.13.1 & 6.13.2	-do-	R			
7.3.4	Pressure gauge & adopter and cap.	7.3.4	S 1970:1995 and IS 3624:1987	R	Every tenth piece		The pressure gauges shall be calibrated before fixing on the sprayer.
7.3.5	Pressure relief valve	7.3.5	-do-	R	Each valve		
6.17	Tank height	6.17	IS 1970:1995	R	-do-		
8	Workmanship & finish	8.1 & 8.2	-do-	R	All components of sprayer		
7.1 & 7.2	Manual & spare parts	7.1 & 7.2	IS 3652:1995	R	Each sprayer		



**\*\* Note 1** Initially each control unit shall be tested till three consecutive control units are found to be satisfactory. From the subsequent production every 7th control unit shall be tested. Whenever a failure is encountered, the control unit in which failure has occurred shall not be marked. From the subsequent production each control unit shall be tested till three consecutive control units are found to be satisfactory whereupon the original frequency of testing every 7th control unit may be resumed.

**Note-2:** Whether test equipment is required or sub-contracting is permitted in column 2 shall be decided by the Bureau and shall be mandatory. 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.