



**ENGINE OPERATED SPRAYER
ASPEE, HTP PS-50**



सत्यमेव जयते

भारत सरकार

Government of India

कृषि एवं किसान कल्याण मंत्रालय

Ministry of Agriculture and Farmers Welfare

कृषि, सहकारिता एवं किसान कल्याण विभाग

Department of Agriculture, Cooperation and Farmers Welfare

उत्तरी क्षेत्र कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

Northern Region Farm Machinery Training and Testing Institute

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xiii)	Spray nozzles	Brass, stainless steel	Brass	Conforms
xiv)	Spray boom	Mild steel, Galvanized, iron Braided rubber	Not applicable	--
xv)	Hose	Synthetic rubber, P.V.C	PVC	Conforms
xvi)	Tank	Galvanized iron, Brass, Fiber glass reinforced plastics, plastics	Not applicable	--
xvii)	Pipe for agitator	Galvanized iron, Brass, PVC	PVC	Conforms
xviii)	Piston (bucket) screw	Brass, stainless steel	Stainless steel	Conforms
xix)	Crank case	Aluminum alloy	Aluminum alloy	Conforms
xx)	Roller pump body	Nickel resistant cast iron	Not applicable	--
xxi)	Roller pump and plate	Nickel resistant cast iron	Not applicable	--
xxii)	Roller pump rotor	Nickel resistant cast iron	Not applicable	--
xxiii)	Piston pump crank shaft	Carbon steel	Carbon steel	Conforms
xxiv)	Pump inlet port end fitting	Brass	Brass	Conforms
xxv)	Piston rod guide	Brass, Aluminum alloy, Gunmetal, Nylon	Not applicable	--
xxvi)	Connecting rod	Carbon steel	Carbon steel	Conforms
xxvii)	Gudgeon pin	Carbon steel	Carbon steel	Conforms
xxviii)	Big end bearing	Steel coated with tin base white metal	Steel coated with tin base white metal	Conforms
xxix)	Small end bush	Gunmetal	Gunmetal	Conforms
xxx)	The material used for different components shall be declared by the manufacturer all the components mentioned in the table-I may not be present in a particular sprayer.		Not declared	Does not conform

3. TEST FOR DISCHARGE RATE OF PUMP [vide Clause 8.3 of IS- 11313: 2007]

1. Date of test : 18.11.2017
2. Atmospheric conditions :
 - a) Temperature : 21° C
 - b) Relative humidity : 31 %
 - c) Pressure : 98.8 kPa

3. Data recorded

Specified speed of pump (rpm)	pressure (kg/cm ²)	Test No.	Delivery from the discharge line (ml/min)	Overflow (ml/min)	Average discharge from the discharge line (ml/min)	Discharge rate of pump (ml/min)	Power requirement (kW)
972	7.0	1	28330	17115.0	28477.5	45592.5	0.5
		2	28550				
		3	28500				
		4	28530				
959	9.3	1	29800	15160.0	29835.0	44995.0	0.7
		2	29910				
		3	29750				
		4	29880				
954	11.6	1	32600	11907.5	32750.0	44657.5	0.9
		2	32750				
		3	32810				
		4	32840				
950	14	1	36780	7417.5	36705.0	44122.5	1.0
		2	36600				
		3	36740				
		4	36700				

Minimum discharge rate = 44122.5 ml/min at 14 kg/cm²

Maximum discharge rate = 45592.5 ml/min at 7.0 kg/cm²

Discharge at rated pressure = 44122.5 ml/min at 14 kg/cm²

Remarks : NIL

4. TEST FOR VOLUMETRIC EFFICIENCY OF PUMP (Vide clause 8.4 of IS 11313:2007)

Rated pressure, kg/cm ²	:	14
Rated speed of pump, rpm	:	950
Theoretical volume, ml	:	54.97
Actual volume at rated rpm & rated pressure, ml	:	46.79
Volumetric efficiency, %	:	85



Cl.9						
Cl. 9.1	All the components of the sprayer shall be free from burrs, pits and other visual defects which may be detrimental for their use.	Nothing that may be detrimental for use was noticed	Conforms			
Cl. 9.2	The exposed metallic parts shall have a protective coating to prevent surface deterioration.	Exposed metallic parts have the protective coating.	Conforms			
Cl.10. MARKING AND PACKING (Cl.10 IS:11313-2007)						
Cl.10.1 Marking	Each sprayer shall be marked with the following particulars :-					
a)	Manufacturer's name & his registered trade mark, Sl. No. and batch or code No.	ASPEE HTP POWER SPRAYER PS-50				Does not conform- in spirit and also in toto
		Pump revolution	Delivery out put	Maximum pressure	HP Required	
		950 RPM	50 LPM	400 PSI	5 HP	
ASPEE GROUP OF COMPANIES Aspee House, BJ Patel Road Malad (W), Mumbai-400064						

15. CONFORMITY TO INDIAN STANDARDS

- i) IS:11313-2007 (Reaffirmed 2012)-Hydraulic power : **Does not conform in toto**
sprayer-specification
- ii) Spray nozzle and spray gun as per IS:3652-1995 : **Does not conform in toto**
(Reaffirmed 2011)
- iii) Hose and hose connection as per IS:10134-1994 : **Conforms**
- iv) IS: 2643-2005-Pipe threads where pressure-tight : **Conforms**
joint are not made on the threads-dimensions,
tolerance and designation
- v) IS: 7347-1974 (Reaffirmed 2006)-Specification for : **Conforms**
performance of small size spark ignition engines for
agricultural water pumps, sprayers, tillers, reapers
and other similar applications



16. COMMENTS AND RECOMMENDATIONS

- 16.1 The year of manufacture of sprayer is not specified. It **MUST** be specified.
- 16.2 Suitable pressure regulator must be provided on sprayer as per the requirement of Indian Standard.

- 16.3 The pressure gauge marking exceeds 2.5 times the declared value of pressure. Suitable pressure gauge **MUST** be provided to ensure the compliance of the relevant Indian Standard.
- 16.4 The engaged threaded length of pump suction port exceeds the limit specified by Indian Standard. It **MUST** be looked into.
- 16.5 Manufacturing year of pump are not provided. This **MUST** be provided for guidance of user.
- 16.6 The spray gun provided with sprayer is not designated and marked by its identification mark. The identification mark as specified by relevant Indian Standard, **MUST** be provided.
- 16.7 The spray nozzle is not designated and marked by its identification mark. The identification mark as specified by relevant Indian Standard, **MUST** be provided.
- 16.8 The discharge rate for fine cone spray pattern of spray gun at the pressure of 600 ± 60 kPa does not conform to the requirement of Indian Standard. It **MUST** be improved.
- 16.9 This spray angle of the gun at the pressure of 600 to 60 kpa does not conform to the requirement of Indian standard it must be improved.
- 16.10 **The discharge rate of nozzle for fine cone spray & jet spray pattern at a pressure of 300 kPa was not declared by the applicant. Hence it could not be ascertained.**
- 16.11 **The spray angle of nozzle at a pressure 300 KPa was not declared by the applicant. Hence it could not be ascertained**
- 16.12 **Labeling plate** : There is a labeling sticker but without mentioning all the information, thus it defeats the purpose hence to a suitable labeling plate (not sticker) needs to be provided with, inter alia, following information;-
- i. Manufacturer's name
 - ii. Make
 - iii. Model
 - iv. Month & year of manufacture
 - v. Rated speed
 - vi. Rated pressure
 - vii. Discharge rate
 - viii. Power rating of engine
 - ix. SFC of engine
- 16.13 **Safety provision/safety wear**
- i) The accessories viz mask, hand gloves and safety goggles for operator's safety has not been provided with sprayer. It should be provided.
 - ii) Safety instruction regarding handling poisonous agro-chemical & safety precautions before, during and after spraying operation must be added in operator's manual.