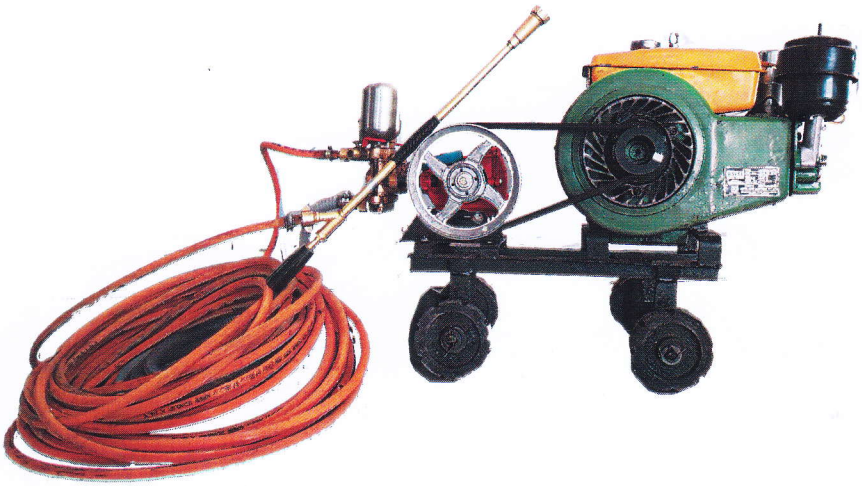
व्यावसायिक परीक्षण रिपोर्ट

COMMERCIAL TEST REPORT

संख्या/ **No.: PS-314/2071/2017**

माह/**Month : November, 2017**



ENGINE OPERATED SPRAYER
ASPEE, HTP PS-16

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

1. Date of test : 17.11.2017
2. Atmospheric conditions :
   a) Temperature : 24° C
   b) Relative humidity : 31 %
   c) Pressure : 100 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)
977	7.0	1	18650	22082.5	18600.0	40682.5	0.5
		2	18600				
		3	18620				
		4	18530				
968	9.3	1	21450	19012.5	21420.0	40432.5	0.6
		2	21400				
		3	21480				
		4	21350				
959	11.6	1	24100	15962.5	24165.0	40127.5	0.8
		2	24210				
		3	24200				
		4	24150				
950	14	1	27200	12075.0	27275.0	39350.0	0.9
		2	27300				
		3	27350				
		4	27250				

Minimum discharge rate = 39350.0 ml/min at 14 kg/cm^2
Maximum discharge rate = 40682.5 ml/min at 7.0 kg/cm^2
Discharge at rated pressure = 39350.0 ml/min at 14 kg/cm^2

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	:	43.17
Actual volume at rated rpm & rated pressure, ml	:	41.47
Volumetric efficiency, %	:	96

Cl.10.	MARKING AND PACKING (Cl.10 IS:11313-2007)					
Cl.10.1 Marking	Each sprayer shall be marked with the following particulars :-	Sticker is provided with the following information				
a)	Manufacturer's name & his registered trade mark, Sl. No. and batch or code No.	**ASPEE HTP POWER SPRAYER PS-16**				**Does not conform-in spirit and also in toto**
		Pump revolution	Delivery out put	Maximum pressure	HP Required	
		950 RPM	36 LTTPM	28 kg/ cm^2 (400PSI)	3 HP	
ASPEE GROUP OF COMPANIES PO BOX No 7602, Malad ,Mumbai-400064 ASPEE-HTP PS-16, Ser No 161589 BATCH UGI ASPEE AGRO EQUIPMENT, PVT.LTD. AN ISO 9001-2008 Certified Company						

15. CONFORMITY TO INDIAN STANDARDS

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

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 material used for different components are not declared. It **MUST** be provided.

16.4 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.

16.5 Manufacturing year of pump are not provided. This **MUST** be provided for guidance of user.

16.6 The engaged threaded length of pump suction port exceeds the limit specified by Indian Standard. It MUST be looked into.

16.7 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.

16.8 The spray nozzle is not designated and marked by its identification mark. The identification mark as specified by relevant Indian Standard, **MUST** be provided.

16.9 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.

16.10 This spray angle of the gun at the pressure of 600 kPa pressure does not conforms to the requirement of Indian standard it must be improved.

16.11 The discharge rate for fine cone spray & jet spray pattern at a pressure of 300 kPa does not declared by the applicant.

16.12 The spray angle of nozzle at a pressure 300 KPa was not declared by the applicant. It **MUST** be declared

16.13 **Labeling plate : No labeling plate (only sticker)** is provided, that too 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

16.14 **Safety provision/safety wear**

i) Safety instruction regarding handling poisonous agro-chemical & first aid **MUST** be added in operator's manual.

ii) Safety precautions before, during and after spraying operation **MUST** be added in operator's manual.