व्यावसायिक परीक्षण रिपोर्ट

COMMERCIAL TEST REPORT

संख्या/ **No.: PS-279/2003/2017**

माह/**Month : May, 2017**

ICS FT-30
ENGINE OPERATED SPRAYER

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 : 22.01.2017
2. Atmospheric conditions :
   a) Temperature : 22° C
   b) Relative humidity : 40 %
   c) Pressure : 99 kPa
3. Data recorded

Specified speed of pump (rpm)	Working 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 consumed by pump (kW)
851	15.0	1	12600	21555	12440	33995	0.83
		2	12400				
		3	12360				
		4	12400				
839	18.0	1	13450	19685	13660	33345	0.98
		2	13800				
		3	13690				
		4	13700				
821	21.5	1	14600	17937.5	14582.5	32550	1.14
		2	14450				
		3	14700				
		4	14580				
808	25.0	1	15260	17142.5	15325	32467.5	1.33
		2	15340				
		3	15400				
		4	15300				

Minimum discharge rate = 32467.5 ml/min at 25 kg/cm^2
Maximum discharge rate = 33995 ml/min at 15 kg/cm^2
Discharge rate at rated pressure = 33995 ml/min at 15 kg/cm^2

4 TEST FOR VOLUMETRIC EFFICIENCY OF PUMP
[vide clause 8.4 of IS: 11313-2007]

Rated pressure, kg/cm^2	:	15
Rated rpm of pump	:	850
Theoretical volume, ml	:	42.21
Actual volume at rated rpm and rated pressure, ml	:	39.90
Volumetric efficiency, %	:	94.5

15. COMMENTS AND RECOMMENDATIONS

15.1 Serial number of machine, manufacturing year of pump & country of origin are not provided. This **MUST** be provided for guidance of user.

15.2 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.

15.3 Through pressure regulator cum relief valve it was possible to increase pressure up to 38 kg/cm^2, which is more than 25% of the maximum pressure declared by applicant. It **MUST** be looked into.

15.4 The thickness of the wall of the barrel is less than the value specified in the relevant Indian Standard. It **MUST** be improved.

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

15.6 The discharge rate for fine cone spray & jet 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.

15.7 The discharge rate for jet spray pattern at a pressure of 300 kPa does not conform to the requirement of Indian Standard. It **MUST** be improved.

15.8 The spray angle for fine cone spray pattern at a pressure of 300 kPa does not conform to the requirement of Indian Standard. It **MUST** be improved.

15.9 Labeling plate : Provided (Sticker)

There is a labeling sticker but without mentioning even manufacturer's name 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