व्यावसायिक परीक्षण रिपोर्ट

COMMERCIAL TEST REPORT

संख्या/ **No.: PS-318/2091/2017**

माह/**Month : December, 2017**

ENGINE OPERATED KNAPSACK SPRAYER SREE MARKETING F-708

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 : 30.11.2017
2. Atmospheric conditions :
   a) Temperature : 20° C
   b) Relative humidity : 40 %
   c) Pressure : 99.15 kPa
3. Data recorded

Speed of engine (rpm)	Working pressure (kg/cm^2)	Test No.	Delivery from the discharge line (ml/min)	Overflow (ml/min)	Average delivery from the discharge line (ml/min)	Discharge rate of pump (ml/min)	Power consumed by pump (kW)
7095	7.0	1	7800	Nil	7755.0	7755.0	0.1
		2	7750				
		3	7770				
		4	7700				
6857	7.6	1	7300	Nil	7375.0	7375.0	0.1
		2	7450				
		3	7350				
		4	7400				
6685	8.9	1	7000	Nil	6985.0	6985.0	0.1
		2	6980				
		3	7010				
		4	6950				
6430	9.0	1	6650	Nil	6727.5	6727.5	0.1
		2	6730				
		3	6750				
		4	6780				

Minimum discharge rate = 6727.5 ml/min at 9 kg/cm^2
Maximum discharge rate = 7755.0 ml/min at 7 kg/cm^2
Discharge at rated pressure = 7755.0 ml/min at 7 kg/cm^2

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

Rated pressure, kg/cm^2	:	7
Pump speed corresponding to rated speed of engine	:	1921
Theoretical volume, ml	:	4.33
Actual volume at rated speed and pressure, ml	:	4.04
Volumetric efficiency, %	:	93

16. COMMENTS AND RECOMMENDATIONS

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

16.2 The sprayer serial number is not specified. It **MUST** be specified.

16.3 The sprayer year of manufacture is not specified . It should be specified.

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

16.5 The manufacture year of the pump is not specified. It **MUST** be specified.

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

16.7 Suitable pressure gauge as per the requirements of Indian Standard **MUST** be provided on sprayer.

16.8 The strainer in nozzle is not provided. It **MUST** be provided.

16.9 The manufacture's name or recognized trade make and batch or code number on nozzle is not provided. It **MUST** be provided.

16.10 The spray gun manufacturer's name or recognized trade mark & batch or code number is not marked on gun. It **MUST** be marked.

16.11 The discharge rate for fine cone spray pattern and jet spray pattern of spray gun at the pressure of 600 kPa does not conform to the requirement of IS: 3652:1995. It **MUST** be looked into.

16.12 The discharge rate for fine cone spray & jet spray pattern of nozzle at a pressure of 300 kPa does not conform to the requirement of IS: 3652:1995. It **MUST** be looked into.

16.13 The spray angle of nozzle at a pressure of 300 kPa does not conform to the requirement of IS: 3652:1995. It **MUST** be looked into.

16.14 It was not possible to increase pressure by the pressure regulator valve. It **MUST** be looked into.

16.15 The spray gun connecting rod diameter does not meet the requirement of Indian standard. It **MUST** be looked into.

16.16 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

16.17 Safety provision/safety wear

i) Accessories for operators safety against pesticide is not provided. It **MUST** be provided.

ii) Safety instructions regarding handling poisonous agro-chemical safety precautions before , during and after spraying **MUST** be added in operator's manual.

17. TECHNICAL LITERATURE

The following literatures is provided with sprayer for guidance to the user.

i) User manual and specification sheet of sprayer pump.
ii) Specification sheet of engine.

The literature was found inadequate as all the necessary information required was not there. It needs to be updated as per IS: 8132-1999.

TESTING AUTHORITY

R. K. NEMA SENIOR AGRICULTURAL ENGINEER	
P. K. PANDEY **DIRECTOR**	

18. APPLICANT'S COMMENTS

In response to draft test report the applicant has specified the name and address of applicant as follows :-

M/s Sree Marketing
Ghatkesar, R.R. District
Telangana State