

ब्यावसायिक परीक्षण रिपोर्ट
COMMERCIAL TEST REPORT

संख्या/ No.: PS-399/2321/2019

माह/Month: June, 2019

THIS TEST REPORT VALID UP TO : 30th JUNE, 2026



**KISHAN AGROTECH, KRISHI CRAFT KC-767
ENGINE OPERATED KNAPSACK SPRAYER**



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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[ISO 9001:2015 CERTIFIED]

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xxix)	Small end bush	Gunmetal	Not applicable	--
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.		Declared	Conforms

3. TEST FOR DISCHARGE RATE OF PUMP

[vide Clause 8.3 of IS- 11313: 2007]

- Date of test : 05.06.2019
- Atmospheric conditions
 - Temperature : 40 °C
 - Relative humidity : 41 %
 - Pressure : 97.8 kPa
- 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)	Hydraulic Power (kW)
6143	10	1	6300	Nil	6225.0	6225.0	0.10
		2	6220				
		3	6200				
		4	6180				
6088	12	1	6100	Nil	6115.0	6115.0	0.12
		2	6140				
		3	6100				
		4	6120				
6035	14	1	6050	Nil	6040.0	6040.0	0.14
		2	6000				
		3	6070				
		4	6040				
5958	16	1	5920	Nil	5922.5	5922.5	0.16
		2	5960				
		3	5950				
		4	5860				

Minimum discharge rate = 5922.5 ml/min at 16 kg/cm²
 Maximum discharge rate = 6225.0 ml/min at 10 kg/cm²
 Discharge at rated pressure = 6225.0 ml/min at 10 kg/cm²

16. CONFORMITY TO INDIAN STANDARDS

- i) IS:11313-2007 (Reaffirmed 2012)-Hydraulic : **Does not conform in toto**
power 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 : **Could not be ascertained**
for performance of small size spark ignition
engines for agricultural water pumps, sprayers,
tillers, reapers and other similar applications

17. COMMENTS AND RECOMMENDATIONS

- 17.1 The sprayer serial number is not specified. It **MUST** be specified.
- 17.2 The engine make and serial number is not specified. It **MUST** be specified.
- 17.3 The sprayer year of manufacture is not specified . It should be specified.
- 17.4 The spray gun is not designated and marked by identification mark. The identification mark as specified by relevant Indian Standard **MUST** be specified.
- 17.5 The pump manufacturing year and, serial No is not specified. It **MUST** be specified.
- 17.6 The spray nozzle is not designated and marked by its identification mark. The identification mark as specified by relevant Indian Standard, **MUST** be provided.
- 17.7 The strainer in nozzle is not provided. It may be considered for providing.
- 17.8 The manufacture's name or recognized trade mark and batch or code number on nozzle is not provided. It **MUST** be provided.
- 17.9 The manufacture's name or recognized trade mark and batch or code number is not marked on spray gun. It **MUST** be provided.
- 17.10 The material of spreader does not meet the requirement of relevant code/Standard. It **MUST** be looked into.
- 17.11 The material of pump inlet port end fitting does not meet the requirement of relevant code/Standard. It **MUST** be looked into.
- 17.12 The manufacture's name or recognized trade mark and batch or code number is not marked on spray gun. It **MUST** be provided.
- 17.13 The diameter of connecting rod is less than the valve specified in the relevant code/Standard. It **MUST** be improved.

- 17.14 The thickness of wall of barrel does not meet the requirement of relevant code/Standard. It **MUST** be improved.
- 17.15 The discharge rate for fine cone spray pattern and jet spray of gun at pressure at 600 kPa does not conform to the requirement of IS: 3652-1995. It **MUST** be looked into.
- 17.16 The discharge rate for fine cone spray pattern and jet spray of nozzle at a pressure of 300 kPa does not conform to the requirement of IS: 3652-1995. It **MUST** be looked into.
- 17.17 The spray angle for fine cone spray pattern of gun at a pressure of 600 kPa does not conform to the requirement of IS: 3652-1995. It **MUST** be looked into for further improvement.
- 17.18 The spray angle for fine cone 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.
- 17.19 At rated pressure of 8 Kg/cm² the pump discharge was observed as 6225.0 ml/min. against the minimum requirement of 8000.0 ml/min. This **MUST** be examined.
- 17.20 The pressure gauge with full scale reading 120 kg/cm² is provided, thus it does not conform to requirement of IS: 11313-2007. It **MUST** be looked into.
- 17.21 Though a pressure regulator provided but that was not in working condition therefore its conformity to IS: 11313-2007 could not be ascertained. It **MUST** be looked into for corrective action.
- 17.22 No necessary tools are provided with sprayer. It **MUST** be provided.
- 17.23 The suction strainer aperture size does not meet the requirement of Indian Standard. It **MUST** be looked into.
- 17.24 At the rated pressure of 8 Kg/cm² the engine speed dropped up to 6143 rpm against the rated engine speed of 6500 rpm. This **MUST** be looked into.
- 17.25 A suitable labeling plate (not sticker) needs to be provided with, inter alia, following information;-
- Manufacturer's name
 - Make
 - Model
 - Month & year of manufacture
 - Rated speed
 - Rated pressure
 - Discharge rate
 - Power rating of engine
 - SFC of engine
- 17.26 **Safety provision/safety wear**
- Apron, gum boots and ear protector must be added in safety wear.
 - Safety instructions regarding handling poisonous agro-chemical before, during and after spraying operations should be provided on sprayer.

18. TECHNICAL LITERATURE

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

i) Operation manual and parts catalogue of sprayer.

The following literature **MUST** be provided with the sprayer :-

i) Service manual of sprayer.

ii) Operation, service manual and parts catalogue of engine.

The operation manual of sprayer needs to be updated as per IS 8132-1999.

TESTING AUTHORITY

R. K. NEMA SENIOR AGRICULTURAL ENGINEER	<i>Re</i>
P. K. PANDEY DIRECTOR	<i>Uzn - Omsh</i>

19. APPLICANT'S COMMENTS

Para No	Our reference	Applicant's comments
19.1	17.3	Spray gun will be marked with trade mark
19.2	17.4,17.5,17.7,17.9	We will take corrective action
19.3	17.6,17.8	Will be provided
19.4	17.10 to 17.17	Our manufacturing unit will look into the same and will take corrective action

