



**ENGINE OPERATED KNAPSACK SPRAYER
AGRIMATE AMH-999A 4S-GX25**



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

ट्रैक्टर नगर, सिरसा रोड, हिसार, (हरियाणा) - 125 001

Tractor Nagar, Sirsa Road, HISAR (Haryana)-125 001

Website: <http://nrfmtti.gov.in/>

E-mail: fmti-nr@nic.in

Tele./FAX: 01662-276984

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

1. Date of test : 08.11.2017
2. Atmospheric conditions :
 - a) Temperature : 29° C
 - b) Relative humidity : 37%
 - c) Pressure : 101.3 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)
7000	7	1	8200	Nil	8172.5	8172.5	0.1
		2	8180				
		3	8100				
		4	8210				
6850	7.5	1	7830	Nil	7582.5	7582.5	0.1
		2	7500				
		3	7300				
		4	7700				
6750	8.0	1	7350	Nil	7327.5	7327.5	0.1
		2	7400				
		3	7300				
		4	7260				
6642	9.0	1	7000	Nil	6995.0	6995.0	0.1
		2	6950				
		3	7050				
		4	6980				

Minimum discharge rate = 7995.0 ml/min at 9 kg/cm²
Maximum discharge rate = 8172.5 ml/min at 7 kg/cm²
Discharge at rated pressure = 8172.5 ml/min at 7 kg/cm²

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

Rated pressure, kg/cm² : 7
 Pump speed corresponding to rated speed of engine : 1896
 Theoretical volume, ml : 4.48
 Actual volume at rated speed and pressure, ml : 4.31
 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 :-		
a)	Manufacturer's name & his registered trade mark, Sl. No. and batch or code No.	Just a sticker on tank is provided with following information:- Agrimate Maximum-Super Economy AMH-999A Knapsack Power Sprayer,4 stroke powered by Honda	Does not conform- in spirit and also in toto

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 per IS: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 : **Could not be ascertained**

16. COMMENTS AND RECOMMENDATIONS

- 16.1 The sprayer serial number is not specified. It **MUST** be specified.
- 16.2 The sprayer year of manufacture is not specified . It should be specified.
- 16.3 The compression ratio of engine is not declared. It should be declared.
- 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 pump make, model & year of manufacture is not specified. It **MUST** be specified.
- 16.6 The thickness of the wall of the barrel and diameter of the connecting rod is less than the value specified in the relevant Indian Standard. It **MUST** be improved.
- 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 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 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 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.
- 16.14 It was not possible to increase pressure by the pressure regulator valve. It **MUST** be looked into.
- 16.15 A suitable pressure gauge **MUST** be provided on sprayer as per the specifications specified by Indian standard.
- 16.16 The spray gun thickness of wall & connecting rod diameter does not meet the requirement of Indian standard. It **MUST** be looked into.
- 16.17 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
- 16.18 **Safety provision/safety wear**
- i) Safety instructions regarding handling poisonous agro-chemical safety precautions before , during and after spraying **MUST** be added in operator's manual.