

THIS TEST REPORT VALID UP TO : 29<sup>th</sup> February, 2028



**SREE MARKETING, SRM GX-25  
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]

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

xii)	Gasket	Rubber, PVC, fibre	PVC	Conforms
xiii)	Spray nozzles	Brass, stainless steel	Brass	Conforms
xiv)	Spray boom	Mild steel, Galvanized, iron Braided rubber	Not applicable	--
xv)	Hose	Synthetic rubber, P.V.C	PVC	Conforms
xvi)	Tank	Galvanized iron, Brass, Fiber glass reinforced plastics, plastics	Plastic	Conforms
xvii)	Pipe for agitator	Galvanized iron, Brass, PVC	PVC	Conforms
xviii)	Piston (bucket) screw	Brass, stainless steel	Not applicable	--
xix)	Crank case	Aluminum alloy	Not applicable	--
xx)	Roller pump body	Nickel resistant cast iron	Not applicable	--
xxi)	Roller pump and plate	Nickel resistant cast iron	Not applicable	--
xxii)	Roller pump rotor	Nickel resistant cast iron	Not applicable	--
xxiii)	Piston pump crank shaft	Carbon steel	A quadrant gear driven by drive shaft of gear box mounted on plunger rod.	--
xxiv)	Pump inlet port end fitting	Brass	Brass	Conforms
xxv)	Piston rod guide	Brass, Aluminum alloy, Gunmetal, Nylon	Not applicable	--
xxvi)	Connecting rod	Carbon steel	Not applicable	--
xxvii)	Gudgeon pin	Carbon steel	Not applicable	--
xxviii)	Big end bearing	Steel coated with tin base white metal	Not applicable	--
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 by the manufacturer	Conforms

### 3. TEST FOR DISCHARGE RATE OF PUMP

[vide Clause 8.3 of IS- 11313: 2007]

1. Date of test : 13.02.2021
2. Atmospheric conditions :
  - a) Temperature : 17° C
  - b) Relative humidity : 68.2 %
  - c) Pressure : 99.3 kpa



## 3. Data recorded

Speed of engine (rpm)	Working pressure (kg/cm <sup>2</sup> )	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)
6090	8.0	1.	6290	NIL	6247.5	6247.5	0.08
		2.	6240				
		3.	6200				
		4.	6260				
5760	9.5	1.	5900	NIL	5910.0	5910.0	0.09
		2.	5920				
		3.	5870				
		4.	5950				
5657	11.0	1.	5820	NIL	5900.0	5790.0	0.11
		2.	5800				
		3.	5760				
		4.	5780				
5405	12	1.	5620	NIL	5612.5	5612.5	0.11
		2.	5600				
		3.	5640				
		4.	5590				

Minimum discharge rate = 5612.5 ml/min at 12 kg/cm<sup>2</sup>  
 Maximum discharge rate = 6247.5 ml/min at 8 kg/cm<sup>2</sup>  
 Discharge at rated pressure = 6247.5 ml/min at 8 kg/cm<sup>2</sup>

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

Date : 15.02.2021  
 Rated pressure, kg/cm<sup>2</sup> : 8  
 Engine speed corresponding to rated pressure (rpm) : 6087  
 Theoretical cubic capacity of pump, ml : 6711.42  
 Actual volume at rated pressure, ml : 6207.50  
 Volumetric efficiency, % : 92.50

#### 5. POWER REQUIREMENT

During the pump operation from minimum to maximum pressure range, the max. hydraulic power was observed as 0.11 kW against the declared net power output of engine as 0.72 kW.



## 17. COMMENTS AND RECOMMENDATIONS


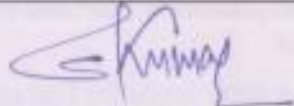
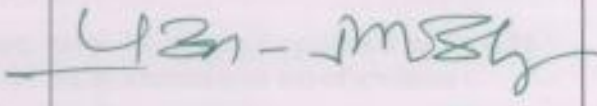
- 17.1 The serial number and year of manufacture of sprayer is not specified. It **MUST** be looked into.
- 17.2 The magneto contact breaker point gap and ignition timing of engine is not specified. It **MUST** be looked into.
- 17.3 The spray nozzle is not designation and marked by its identification mark. Identification mark as per specified by Indian standard. It **MUST** be looked into.
- 17.4 Manufacturing year and country of origin of pump is not specified. It **MUST** be looked into.
- 17.5 The spray angle for fine cone spray pattern of spray gun at a pressure of 600 kPa does not conform to the requirement of IS:3652-1995. It **MUST** be looked into.
- 17.6 The discharge rate for 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.
- 17.7 The spray gun is not designated and marked by its identification mark. The identification mark as per specified by Indian standard. It **MUST** be looked into
- 17.8 The engaged length of outlet port of pump does not meet the requirement of relevant code/Standards. It **MUST** be looked into.
- 17.9 The pressure gauge with full scale reading is 100 bar provided, thus it does not conform to requirement of IS:11313-2007. It **MUST** be looked into.
- 17.10 At rated pressure of 8 Kg/cm<sup>2</sup> the pump discharge was observed as 6247.5 ml/min. against the minimum requirement of 8000.0 ml/min. This **MUST** be examined.
- 17.11 The strainer in nozzle is not provided. It may be considered for providing.
- 17.12 The thickness of the wall of barrel of gun does not meet the requirement of Indian Standards. It **MUST** be looked into.
- 17.13 The diameter of connecting rod of gun does not meet the requirement of Indian standard. It **MUST** be looked into.
- 17.14 A suitable labeling plate (not sticker) needs to be provided with "inter alia" following information
- i) Manufacturing's name
  - ii) Make
  - iii) Model
  - iv) Month & year of manufacture
  - v) Rated pressure
  - vi) Rated Speed
  - vii) Discharge rate
  - viii) Power rating of engine
  - ix) SFC of engine

**18. TECHNICAL LITERATURE**

One Photostat copy entitled "User's manual" has been provided. The same, however, does not indicate the make and model of the sprayer it is related to. It amount to not providing the relevant literature.

It is therefore recommended that the literature be brought out as per IS: 8132-1999.

**TESTING AUTHORITY**

MAAN SINGH SENIOR TECHNICAL ASSISTANT	
SANJAY KUMAR AGRICULTURAL ENGINEER	
P. K. PANDEY DIRECTOR	

**19. APPLICANT'S COMMENTS**

Para No.	Our reference	Applicant's Comments
19.1	17.2	Applicant has now declared on 25/02/2021 that magneto contact braker point gap as 0.5 mm and ignition timing of engine is $30 \pm 2$ before TDC.
19.2	17.3	This will be corrected in the production.
19.3	17.7	This will be rectified at the time of manufacturing.

