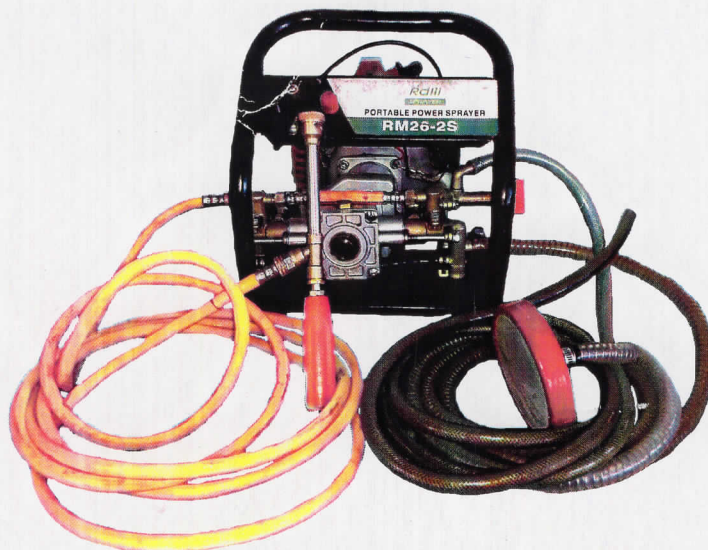


THIS TEST REPORT VALID UP TO : 31st July, 2026



**RALLI RM-26 2/S
ENGINE OPERATED PORTABLE 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

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

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

[ISO 9001:2015 CERTIFIED]

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 : 19.06.2019
2. Atmospheric conditions :
 - a) Temperature : 34 °C
 - b) Relative humidity : 51 %
 - c) Pressure : 97.8 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)	Hydraulic Power (kW)
6335	8	1	6900	Nil	6885.0	6885.0	0.09
		2	6850				
		3	6920				
		4	6870				
6240	10	1	6650	Nil	6662.5	6662.5	0.11
		2	6720				
		3	6600				
		4	6680				
6030	12	1	6450	Nil	6287.5	6287.5	0.12
		2	6250				
		3	6200				
		4	6250				
5790	14	1	5980	Nil	5870.0	5870.0	0.13
		2	5850				
		3	5900				
		4	5750				

Minimum discharge rate = 5870.0 ml/min at 14 kg/cm²Maximum discharge rate = 6885.0 ml/min at 8 kg/cm²Discharge at rated pressure = 6662.5 ml/min at 10 kg/cm²**4. TEST FOR VOLUMETRIC EFFICIENCY OF PUMP**

[vide clause 8.4 of IS: 11313-2007]

Rated pressure, kg/cm² : 10

Engine speed corresponding to rated pressure, (rpm) : 6240

Theoretical cubic capacity of pump : 7317.7
 Actual volume at rated pressure, ml : 6662.5
 Volumetric efficiency, % : 91

5. POWER REQUIREMENT

During the pump operation from minimum to maximum pressure range the max. hydraulic power was observed as 0.13 kW against the declared net power output of engine as 0.75 kW.

6. ENGINE PERFORMANCE TEST

In pursuance of Ministry's order No. 7-23/2011-M&T (I&P) dated 20.04.2011 the engine performance test has not been conducted and the specifications/performance as specified by the applicant have been endorsed.

S.No.	Parameter	Declaration
i	Engine Type	: Single cylinder two stroke air cooled spark ignition engine.
ii	Bore,(mm)	: 30
iii	Stroke (mm)	: 33
iv	Displacement,(cc)	: 25.6
v	Net power out put	: 0.75 kW @ 6700 rpm
vi	Max Torque	: 1.5 Nm@5000 rpm

7. PRESSURE ADJUSTMENT TEST

1. Date of test : 19.06.2019
2. Atmospheric conditions :
 - a. Temperature : 34 °C
 - b. Relative humidity : 51 %
 - c. Pressure : 97.8 kPa
3. Data recorded



S. No.	Working pressure(kg/cm ²)	Fluctuation range (kg/cm ²)	Pressure drop (kg/cm ²)	Ratio
1.	8	NIL	NIL	--
2.	10	NIL	NIL	--
3.	12	NIL	NIL	--
4.	14	NIL	NIL	--

4. Resistance of pressure: Yes

8. TEST FOR HYDRAULIC SPRAY GUN

[Vide Clause 7.3(b) of IS- 11313: 2007 & Annex E of IS- 3652; 1995]

Date of test : 17.06.2019
 Type of gun : Screw type

6	Spray gun marking	Manufacturer name or recognized trade mark. & batch or code number As per BIS code	Not marked	Does not conform
7	Marking of nozzle	Manufacture name/trade name. Batch or code number, nozzle designation must be provided. As per BIS code	Not marked	Does not conform
8	Pressure gauge	Must be provided	Provided	Conforms
9	Safety accessories	Mask, hand gloves and safety goggles, apron, gum boots must be provided	Mask, goggles is provided	Does not conform in toto
10	Necessary tools & spares	Spanners, set of gasket, measuring jar should be provided	The necessary tools are provided	Conforms
11	Marking/labeling of sprayer	Must be riveted on the body of sprayer having name & address of manufacturer, month & year of manufacture, rated speed, rated pressure, discharge rate, power rating of engine, SFC of engine.	Just a sticker provided on pump & engine with following information:- RALLI SPTAYER PORTABLE POWER SPRAYER RM 26-2S	Does not conform
12	Literature	Operator manual, service manual & parts catalogue should be provided, One day training	Operator's manual of sprayer with parts catalogue is provided	Does not conform in toto

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 manufacturing year and serial number of sprayer is not marked. It **MUST** be looked into
- 17.2 The make/model, manufacturing year and serial number of pump is not specified. It **MUST** be looked into.
- 17.3 The thickness of wall of barrel does not meet the requirement of relevant code/standard. It **MUST** be looked into.
- 17.4 The length of spray gun does not meet the requirement of relevant code/standard. It **MUST** be looked into.
- 17.5 The spreader, sprays nozzles and pump inlet port end fitting material does not meet to the requirement of relevant code/standard. It **MUST** be looked into.
- 17.6 The material used for different components are not declare by the applicant. It **MUST** be declared.
- 17.7 The manufacture's name or recognized trade mark and batch or code number on spray gun is not provided. It **MUST** be provided.
- 17.8 The manufacture's name or recognized trade mark and batch or code number on spray nozzle is not provided. It **MUST** be provided.
- 17.9 The spray angle for fine cone spray pattern of gun at a pressure 600 kPa does not conform to the requirement of IS: 3562-1995. It **MUST** be looked into for further improvement.
- 17.10 The spray angle for fine cone spray pattern of nozzle at a pressure 300 Kpa does not conform to the requirement of IS: 3562-1995. It **MUST** be looked into for further improvement.
- 17.11 The discharge rate for fine cone spray pattern and jet spray pattern of spray gun at a pressure of 600kPa does not conform to the requirement of IS:3652-1995. It **MUST** be looked into.
- 17.12 The discharge rate for fine cone spray pattern and 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.
- 17.13 The maximum achievable pressure does not meet the requirement of relevant code/standard. It **MUST** be looked into.
- 17.14 The spray gun is not designated and marked by its identification mark. The identification mark. The identification mark as specified by relevant Indian standard, **MUST** to be provided.
- 17.15 The spray nozzle is not designated and marked by its identification mark. The identification mark as specified by relevant Indian standard, **MUST** to be provided.
- 17.16 The percentage variation in discharge rate of pump does not meet the requirement of relevant code/standard. It **MUST** be looked into.
- 17.17 Though a pressure regulator provided but that was not in the working condition therefore its conformity IS: 11313-2007 could not be ascertained. It **MUST** be looked into for corrective action.
- 17.18 The pressure gauge with full scale reading of 100 bar is provided, thus it does not conform to requirement of IS: 11313-2007. It **MUST** be looked into.

- 17.19 The strainer in nozzle is not provided. It may be considered for providing.
- 17.20 The pump discharge at rated pressure was observed as 6662.5 ml/min. against the requirement of 8000 ml/min. It should be looked into.
- 17.21 At the rated pressure of 10 kg /cm² the engine speed dropped up to 6240 rpm against the rated engine speed of 6700 rpm. It **MUST** be looked into.
- 17.22 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
- Safety provision/safety wear**
- 17.23
- Hand gloves, Apron and Gum boots are **MUST** be include in safety wear.
 - The safety instructions before, during and after spraying operation **MUST** be provided on sprayer.

18. TECHNICAL LITERATURE

The following literature are provided with the sprayer

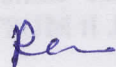
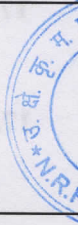
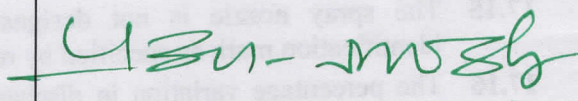
- Operator's manual of sprayer with parts catalogue.

The following literature **MUST** be provided with the sprayer.

- Service manual of sprayer.

The operator's manual of sprayer needs to be update as per IS: 8132-1999.

TESTING AUTHORITY

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

19. APPLICANT'S COMMENTS

Para No	Our reference	Applicant's comments
19.1	17.2	Each pump of sprayer will bear year of manufacturing and serial number.
19.2	17.3, 17.5, 17.16, 17.17, 17.20	Our manufacturing unit will look into the same and will take correction action.
19.3	17.4	Will be provided as per relevant Indian Standard.
19.4	17.6, 17.19, 17.23	Will be provided.
19.5	17.7	Each spray gun will be marked with our trade mark 'RALLY SPRAYER' and batch/code number
19.6	17.8	Each spray gun nozzle will be marked with our trade mark 'RALLY SPRAYER' and batch/code number
19.7	17.9, 17.10, 17.11, 17.12, 17.13, 17.21	We will take corrective action.
19.8	17.14	Spray gun will be designated and marked as specified by Indian Standard.
19.9	17.15	Spray nozzle will be designated and marked as specified by Indian Standard.
19.10	17.18	We will supply the suitable pressure gauge as per Indian Standard.
19.11	17.22	Suitable name plate will be provided with all the details.