ENGINE OPERATED POWER SPRAYER
REDBEE, RPPS-20

GOVERNMENT OF INDIA
MINISTRY OF AGRICULTURE & FARMERS WELFARE
(DEPARTMENT OF AGRICULTURE, COOPERATION & FARMERS WELFARE)

NORTHERN REGION FARM MACHINERY TRAINING AND TESTING INSTITUTE
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| Cl. 5.18 | Air pressure chamber shall withstand the test prescribed in 8.7 with out any deformation or damage. | No damage found in air pressure chamber. | Conforms |
| Cl. 6.1 | Discharge rate/Suction capacity | When tested in accordance with the method given in 8.3, the pump shall be capable of discharging/sucking a minimum of 8000 ml. water per minute at its rated speed and rated pressure. | The pump is capable to discharge 6735 ml/min without gun at 6012 rpm of pump speed and 10 kg/cm² pressure. | Does not conform |
| Cl. 6.1.1 | The discharge rate/suction capacity shall be declared by the manufacturer. | 7.1 l/min declared in the manual of submitted by the manufacturer. | Conforms |
| Cl. 6.2 | Volumetric Efficiency | When determined in accordance with 8.4.1, the volumetric efficiency of the piston/plunger type pump shall minimum 80% | The volumetric efficiency is 95.83% which is specified limit. | Conforms |
| Cl. 6.2.2 | The volumetric efficiency requirement for roller vane type pump shall be minimum 80% | Not applicable | -- |
| Cl. 6.3 | Power requirement | When tested in accordance with the method given in 8.5, pump shaft power requirement shall not be more than that of the value declared by the manufacturer. | Not applicable | -- |
| Cl. 6.4 | Maximum achievable pressure | When tested in accordance with the method given in 8.7, maximum achievable pressure shall not be less than that of the value declared by the manufacturer. | Maximum achievable pressure observed as 30.0 kg/ cm² with gun against the declaration of 10.2 to 40.8 kg/cm². | Conforms |
| Cl. 6.5 | Endurance test | Sprayer shall withstand the test endurance test specified in 8.8 and the variation in Discharge rate between first and last observation shall not be more than ± 5 Percent. | Endurance test of 50 hrs. completed without any breakdown & the variation in pressure. Percentage variation in discharge is 0.93% with in specified limit (see Annexure IV for more details). | Conforms |
| Cl. 7 | OTHER REQUIREMENTS (IS 11313:2007) | | | |
| Cl. 7.1 | Each sprayer shall be provided with parts catalogue and manual giving detailed information about sprayer, engine, its rated speed along with operational and maintenance instructions and safety precautions. | Manual and parts catalogue is provided by the manufacturer and found adequate in contents. | Conforms |
6. **COMMENTS AND RECOMMENDATION:**

6.1 Engine operated power sprayer Redbee, RPPS-20 conforms all the clauses of IS: 11313-2007 except requirement specified in the following clause. These should be rectified and incorporated at manufacturing level:

i) The prime mover fitted in the sprayer manufactured by Taizhou Sunny Agricultural Machinery Co. Ltd., China, model TU-26 petrol engine of 0.75 kW at rated speed of 6000 rpm, In pursuance of ministry’s order no. 7-23/2011-M&T (I&P) dated 20.04.2011 the engine performance test as per IS:7347/1974 has not been conducted and the performance parameters as specified by the applicant have been presumed taking into consideration that the engine manufacturing company is ISO-9001:2008 certified company as is evident from the certificate registration No. 08013Q20010 R2M valid upto 07.08.2016.

ii) The material used for different components required to be declared by the manufacturer as per Clause 4.3 of IS: 11313:2007 which is not declared.

iii) Cl. 6.1 IS: 11313:2007-Discharge rate/suction capacity of pump is not as per Indian Standard.

iv) Cl. E.1 IS: 3652:1995-The Dimension of spray gun, thickness of barrel wall, diameter of connecting rod and length of gun is not as per Indian Standard.

v) Cl. E.5 IS: 3652:1995- The spray gun is not designated by its identification mark.

vi) The gun does not conform the requirement of IS: 3652:1995 Clause E-6 (a) & (b). The manufacturer’s name & trade mark, batch No. or code No. should be marked on gun.

vii) Cl. 10.1 IS: 11313:2007-Sr. No. and batch no. of sprayer is not provided on the sprayer. It should be provided on sprayer.
6.2 The accessories for operator’s safety has not been provided with sprayer. It should be provided for operator’s safety.

6.3 Safety signs and hazard pictorials are not provided on the machine. It should be provided on the machine to alert person to and existing or potential hazard, identify the hazard, describe the nature of hazard, explain the consequences of potential injury from the hazard and instruct the persons about how to avoid the hazard.

6.4 The safe pressure for spraying operation is declared as 10.2 to 40.8 kg/cm². Whereas on label provided on machine it is 5 to 20 kg/cm² and achieved pressure is 30.0 kg/cm². This should be looked into.

7. LITERATURE:
The engine power sprayer operator’s manual in English was provided for referenced during the test. It is found adequate, but it does not have the information regarding sprayer model, manufacturer, Indian distributor/supplier and contact address for customer support. It should be included. The service manual should also be brought out. The literature should be undated as per IS: 8132:1999 and also be brought out in Hindi and other Indian languages.

TESTING AUTHORITY

G.R. AMBALKAR  
Agricultural Engineer

R.K. NEMA  
Senior Agricultural Engineer

HIMAT SINGH  
Director

Test report compiled by: Sh. Maan Singh, Sr. Technical Assistant

8. APPLICANT’S COMMENTS

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