ICS FT- 80
ENGINE OPERATED SPRAYER

Government of India
Ministry of Agriculture and Farmers Welfare
Department of Agriculture, Cooperation and Farmers Welfare
Northern Region Farm Machinery Training and Testing Institute

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

Website: http://nrfmtti.gov.in/
3. TEST FOR DISCHARGE RATE OF PUMP
[vide Clause 8.3 of IS-11313: 2007]

1. Date of test: 23.01.2017
2. Atmospheric conditions:
   a) Temperature: 22°C
   b) Relative humidity: 46%
   c) Pressure: 99 kPa
3. Data recorded

<table>
<thead>
<tr>
<th>Specified speed of engine (rpm)</th>
<th>Working pressure (kg/cm²)</th>
<th>Test No.</th>
<th>Delivery from the discharge line (ml/min)</th>
<th>Overflow (ml/min)</th>
<th>Average discharge from the discharge line (ml/min)</th>
<th>Discharge rate of pump (ml/min)</th>
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</thead>
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</table>

Minimum discharge rate = 7332.5 ml/min at 9 kg/cm²
Maximum discharge rate = 7790 ml/min at 7 kg/cm²
Power at rated pressure = 7790 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 : 1900
Theoretical volume, ml : 4.07
Actual volume at rated rpm and rated pressure, ml : 3.97
Volumetric efficiency, % : 97.5
15. COMMENTS AND RECOMMENDATIONS

15.1 The sprayer serial number is not specified. It **MUST** be specified.

15.2 The compression ratio of engine is not declared. It should be declared.

15.3 The spray nozzle is not designated and marked by its identification mark. The identification mark as specified by relevant Indian Standard, **MUST** be provided.

15.4 Pump serial number is not specified. It should be specified.

15.5 The discharge rate for fine cone spray & jet spray pattern of spray gun at the pressure of 600 kPa does not conform to the requirement of IS: 3652:1995. It **MUST** be looked into.

15.6 The discharge rate for jet spray pattern at a pressure of 300 kPa does not conform to the requirement of IS: 3652:1995. It **MUST** be looked into.

15.7 The spray angle for fine cone spray pattern at a pressure of 300 kPa does not conform to the requirement of IS: 3652:1995. It **MUST** be looked into.

15.8 Through the regulator cum relief valve it was possible to increase pressure up to 25 kg/cm², which is more than 25% of the maximum pressure declared by the applicant. It **MUST** be looked into.

15.9 The pressure gauge marking exceed 2.5 times the declared value of pressure. Suitable pressure gauge **MUST** be provided to ensure the compliance of the relevant Indian Standard.

15.10 The discharge rate/suction capacity of pump does not conform to the requirement of IS:11313:2007. It **MUST** be looked into.

15.11 The spray gun is not designated and marked of its identification mark. The identification mark as specified by relevant Indian Standard, **MUST** be provided.

15.12 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