BATTERY CUM HAND OPERATED KNAPSACK SPRAYER
DASx FARM TECH, DFT-BS-18
3. RUNNING - IN

Though the applicant has not recommended running-in, with the consent of the applicant the running-in of the sprayer was conducted for one hour in order to overcome variation in initial performance. Lubrication and the adjustment of the components were done as per applicants' recommendation.

4. TEST FOR DISCHARGE RATE OF PUMP
(Vide Clause 8.3 of IS: 11313 - 2007)

1. Date of test: 27.07.2018
2. Atmospheric conditions:
   a) Temperature: 31 °C
   b) Relative humidity: 72%
   c) Pressure: 97.2 kPa

3. Data recorded

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

Minimum discharge rate = 1150.0 ml/min at 4.0 kg/cm²
Maximum discharge rate = 2625.0 ml/min at 1 kg/cm²
Discharge at rated pressure = 1400.0 ml/min at 3.0 kg/cm²
5. TEST FOR VOLUMETRIC EFFICIENCY
(Vide Clause 8.4 of IS: 11313 - 2007)

Date of test : 28.07.2018
Rated pressure, kg/cm² : 3
Avg. discharge of water at rated pressure, l/min : 1.405
Avg. discharge of water at no load, l/min : 3.385
Avg. pump speed at no load, rev/min : 3333
Avg. pump speed at rated pressure, rev/min : 2996
Volumetric efficiency of pump, % : 46 %

Remark: - The volumetric efficiency does not conform to the requirement of IS: 11313-2007.

6. POWER REQUIREMENT
(Vide Clause 8.5 of IS – 11313 : 2007)

The power requirement of DC motor fitted on sprayer was observed as following.

1. Motor operating voltage : 12 V
2. Avg. current drawn by motor at no load : 0.78 A
3. Avg. current drawn by motor at load : 1.74 A
4. Avg. motor operating voltage : 12.65 V
5. Avg. observed motor power requirement : 22.01 Watt
6. Avg. motor speed at no load : 3333 rpm
7. Avg. motor speed at load : 2996 rpm
8. Avg. Time required for fully discharge of battery : 7.8 to 8.0 hr
9. Avg. No load rpm of motor after 6 hours of Operation : 2312 rpm

7. PRESSURE ADJUSTMENT TEST
(Vide Clause 8.7.1 of IS – 11313 : 2007)

1. Date of test : 27.07.2018
2. Atmospheric conditions :
   a. Temperature : 31 °C
   b. Relative humidity : 72 %
   c. Pressure : 97.2 kPa
3. Data recorded

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Working pressure (kg/cm²)</th>
<th>Fluctuation range (kg/cm²)</th>
<th>Pressure drop (kg/cm²)</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
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<td>NIL</td>
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</tr>
<tr>
<td>4.</td>
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<td>NIL</td>
<td>NIL</td>
<td>--</td>
</tr>
</tbody>
</table>

4. Resistance of pressure: Yes
25. CONFORMITY TO INDIAN STANDARDS

i) IS: 11313:2007 Hydraulic power sprayers-
specification : Does not conform in toto

ii) IS: 10134-1994-METHOD of test for manually :
operated sprayer : Does not conform in toto

iii) Spray nozzle and spray gun as per IS:3652-
1995 (Reaffirmed 2011) : Does not conform in toto

vi) IS: 2643-2005-Pipe threads where pressure-
tight joint are not made on the threads-
dimensions, tolerance and designation : Does not conform in toto

26. COMMENTS & RECOMMENDATIONS

26.1 The sprayer year of manufacture is not marked. It should be marked.

26.2 The motor make, power and rated speed is not specified. It should be specified.

26.3 The make, model and country of origin of battery charger is not specified. It should be specified.

26.4 The make and serial no. of battery is not specified. It should be specified.

26.5 The country of origin of pump is not specified. It should be specified.

26.6 The dimension of straps does not meet the requirements of Indian Standard. It MUST be looked into.

26.7 During the strap drop test the buckle/bracket of strap assembly found failed to hold the strap in its position. It should be provided.

26.8 The batch or code number on nozzle is not provided. It MUST be looked into.

26.9 The strap cushion thickness does not meet the requirement of Indian standard. It MUST be looked into.

26.10 The average size of strainer of cut-off device does not meet the requirement of Indian Standard. It MUST be looked into.

26.11 The spray angle of nozzle at 300 kPa pressure does not conform to the requirement of IS: 3652-1995. It MUST be looked into.

26.12 Material used for pressure regulators & pump inlet port end fitting does not meet the requirement of IS:11313-2007. It MUST be looked into.

26.13 The lance is not marked with batch or code number. It MUST be marked.

26.14 Material used for end fitting of spray lance does not meet the requirement of IS:3652-1995. It MUST be looked into.