J P AGRO, J P-25
ENGINE OPERATED SPRAIER

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

Website: http://nrfmtti.gov.in/
E-mail: fmti-rr@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: 25.09.2017
2. Atmospheric conditions:
   a) Temperature: 32°C
   b) Relative humidity: 62%
   c) Pressure: 97.8 kPa
3. Data recorded

<table>
<thead>
<tr>
<th>Specified speed of pump (rpm)</th>
<th>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>
<th>Power requirement (kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>851</td>
<td>15</td>
<td>1</td>
<td>23330</td>
<td>Nil</td>
<td>23385.0</td>
<td>23385.0</td>
<td>0.58</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>23490</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>23320</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>23400</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>846</td>
<td>18</td>
<td>1</td>
<td>2300</td>
<td>Nil</td>
<td>23037.5</td>
<td>23037.5</td>
<td>0.68</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>23120</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>23130</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>22900</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>837</td>
<td>21.5</td>
<td>1</td>
<td>22810</td>
<td>Nil</td>
<td>22797.5</td>
<td>22797.5</td>
<td>0.81</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>22750</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>22900</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>22730</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>831</td>
<td>25</td>
<td>1</td>
<td>22470</td>
<td>Nil</td>
<td>22410.0</td>
<td>22410.0</td>
<td>0.93</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>22430</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
<td>22340</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>22400</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Minimum discharge rate = 22410.0 ml/min at 25 kg/cm²
Maximum discharge rate = 23385.0 ml/min at 15 kg/cm²
Discharge at rated pressure = 23385.0 ml/min at 15 kg/cm²

Remarks: NIL

### 4. TEST FOR VOLUMETRIC EFFICIENCY OF PUMP

[Vide clause 8.4 of IS 11313:2007]

- Rated pressure, kg/cm²: 15
- Rated speed of pump, rpm: 850
- Theoretical volume, ml: 28.74
- Actual volume at rated rpm & rated pressure, ml: 27.56
- Volumetric efficiency, %: 96
ENGINE OPERATED SPRAYER
J.P AGRO, J.P-25 (COMMERCIAL)

Cl.9

<table>
<thead>
<tr>
<th>Cl. 9.1</th>
<th>All the components of the sprayer shall be free from burrs, pits and other visual defects which may be detrimental for their use.</th>
<th>Nothing that may be detrimental for use was noticed</th>
<th>Conforms</th>
</tr>
</thead>
</table>

| Cl. 9.2 | The exposed metallic parts shall have a protective coating to prevent surface deterioration. | Exposed metallic parts have the protective coating. | Conforms |

Cl.10.

MARKING AND PACKING
(CL.10 IS:11313-2007)

<table>
<thead>
<tr>
<th>Cl.10.1 Marking</th>
<th>Each sprayer shall be marked with the following particulars :-</th>
</tr>
</thead>
<tbody>
<tr>
<td>a)</td>
<td>Manufacturer’s name &amp; his registered trade mark, Sl. No. and batch or code No.</td>
</tr>
</tbody>
</table>

14. CONFORMITY TO INDIAN STANDARDS

i) IS:11313-2007 (Reaffirmed 2012)-Hydraulic power sprayer-specification | Does not conform in toto |

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

iii) Hose and hose connection as per IS:10134-1994 | Conforms |

iv) IS: 2643-2005-Pipe threads where pressure-tight joint are not made on the threads-dimensions, tolerance and designation | Conforms |

v) IS: 7347-1974 (Reaffirmed 2006)-Specification for performance of small size spark ignition engines for agricultural water pumps, sprayers, tillers, reapers and other similar applications | Conforms |

15. COMMENTS AND RECOMMENDATIONS

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

15.2 The material used for different components are not declared. It MUST be provided.
15.3 Serial number of machine, manufacturing year of pump & country of origin are not provided. This **MUST** be provided for guidance of user.

15.4 The thickness of the wall of the barrel is less than the value specified in the relevant Indian Standard. It **MUST** be improved.

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

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

15.7 The discharge rate for fine cone spray pattern of spray gun at the pressure of 600 ± 60 kPa does not conform to the requirement of Indian Standard. It **MUST** be improved.

15.8 This spray angle of the gun at the pressure of 600 to 60 kpa does not conforms to the requirement of Indian standard it must be improved.

15.9 The discharge rate for fine cone spray & jet spray pattern at a pressure of 300 kPa does not conform to the requirement of Indian Standard. It **MUST** be improved.

15.10 The spraying pressure is specified as 15 to 25 kg/cm² on labeling sticker, whereas in the specification sheet it is specified as 15 to 22 kg/cm². It should be corrected on labeling sticker.

15.11 **Labeling plate** : Provided (Sticker)
There is a labeling sticker but without mentioning all the information, thus it defeats the purpose hence to 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

15.12 **Safety provision/safety wear**
i) Safety instructions regarding handling poisonous agro-chemical and first aid **MUST** be added in operator’s manual.