COMMERCIAL TEST REPORT

No. : PS-153/1724/2015
Month: April, 2015

TRACTOR OPERATED POWER SPRAYER
‘AGRIMATE, AM-30’

GOVERNMENT OF INDIA
MINISTRY OF AGRICULTURE
(DEPARTMENT OF AGRICULTURE & COOPERATION)

NORTHERN REGION FARM MACHINERY TRAINING AND TESTING INSTITUTE
TRACTOR NAGAR, SIRSA ROAD, HISAR-125001 (HARYANA)

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<table>
<thead>
<tr>
<th>Clause</th>
<th>Description</th>
<th>Specification</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cl.5.14.3</td>
<td>The hose and hose connection shall withstand the test prescribed in 7.2 of IS 10134-1999. A minimum hydrostatic pressure of 1.5 MPa, using water as a liquid, shall be developed in the hose assembly and the pressure shall be retained for a period of 5 minutes.</td>
<td>There was no leakage, crack and breakage in hose &amp; hose connection during testing.</td>
<td>Conforms</td>
</tr>
<tr>
<td>Cl.5.15</td>
<td>Nozzle</td>
<td>Unless otherwise specified by the pursuer, the nozzle shall conform to the requirement of Annexure F of IS 3652.</td>
<td>Not applicable for spray gun</td>
</tr>
<tr>
<td>Cl.5.16</td>
<td>The engine and electric motor shall conform to the requirements as given in IS 7347 and IS 325 respectively.</td>
<td>No applicable as tractor powered sprayer</td>
<td>-</td>
</tr>
<tr>
<td>Cl.5.16.1</td>
<td>The exhaust outlet of the engine shall be so positioned that the smoke does not directly affect the operator or crop. A guard shall be provided on or near the exhaust pipe for the protection of the operator.</td>
<td>Not applicable as it is tractor powered sprayer.</td>
<td>-</td>
</tr>
<tr>
<td>Cl.5.17</td>
<td>The fuel and chemical discharge controls shall be in easy access of the operator.</td>
<td>Not applicable as it is tractor powered sprayer.</td>
<td>-</td>
</tr>
<tr>
<td>Cl.5.18</td>
<td>Air pressure chamber shall withstand the test prescribed in 8.7 without any deformation or damage.</td>
<td>No damage found in air pressure chamber</td>
<td>Conforms</td>
</tr>
</tbody>
</table>

**Cl.6. IS 11313:2007 PERFORMANCE REQUIREMENTS**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Cl.6.1</td>
<td>Discharge rate/Suction capacity</td>
<td>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.</td>
<td>The pump is capable to discharge 31958 ml/min without gun at 814 rpm of pump speed and 9.0 kg/cm² pressure (Ref Annexure-I)</td>
</tr>
<tr>
<td>Cl.6.1.1</td>
<td>The discharge rate/suction capacity shall be declared by the manufacturer</td>
<td>Declared as on ID plate of pump 29 to 34 l/min</td>
<td>Conforms</td>
</tr>
<tr>
<td>Cl.6.2</td>
<td>Volumetric Efficiency</td>
<td>When determined in accordance with 8.4.1, the volumetric efficiency of the piston/plunger type pump shall minimum 80 percent.</td>
<td>The volumetric efficiency is 90.75 % which is within specified limit</td>
</tr>
<tr>
<td>Cl.6.2.1</td>
<td></td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Cl.6.2.2</td>
<td>The volumetric efficiency requirement for roller vane type pump shall be minimum 80%</td>
<td>Not applicable</td>
<td>-</td>
</tr>
</tbody>
</table>
CI. E 6
MARKING

Each gun shall be marked with the following particulars

a) Manufacturer's name or recognized trade mark, and

b) Batch or code no.

VENUS

Conforms

Not marked

Does not conform

CI.8.6
IS 11313:2007
Agitation
Performance

The agitation performance is checked

Agitation performance found satisfactory.

Cl.9
IS : 11313-2007 WORKMANSHIP AND FINISH

Cl. 9.1

All the components of the sprayer shall be free from burrs, pits and other visual defects which may be detrimental for their use.

Finishing and workmanship is good.

CI. 9.2

The exposed metallic parts shall have a protective coating to prevent surface deterioration.

Exposed metallic parts have the protective

CI.10. IS:11313: 2007 MARKING AND PACKING

Cl.10.1

Marking

Each sprayer shall be marked with the following particulars :-

a) Manufacturer's name & his registered trade mark

b) Sl. No. and batch or code No.

Marked

Marked

Conforms

Conforms

6. COMMENTS AND RECOMMENDATION:-

6.1 Tractor operated hydraulic power sprayer ‘Agrimate AM-30’ conforms all the requirements of IS 11313:2007 except requirement specified in the following clause. These should be rectified and incorporated at manufacturing level:-

i) Hub dimension of propeller shaft should conforms to IS:4931:1995.

ii) (a) Diameter of upper hitch pin hole (b) Diameter of lower hitch pin (c) Lower hitch pin span (d) Diameter for linch pin for upper and lower hitch pins (please refer para 4.8 of the test report for more details) does not conforms to IS:4468 (Part-I):1997. It should be looked into.

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

iv) Cl. 5.2.2 IS 11313:2007 Drain plug for chemical tank not provided, it should be provided.

v) The designation and marking on the spray gun is not provided. It should be provided.

vi) The safety guard for the belt drive pulley& propeller shaft are not provided. It should be provided for the safety of the users.
6.2 Accessories for operator's safety against pesticides are not provided. It should be provided.
6.3 The marking/labeling plate is provided on the machine. The information regarding tractor power requirement and pto speed may be provided on it.
6.4 The literature is provided for reference during test. The operator's manual service 
& spare parts catalogue/manual may be brought as per IS: 8132-1999, in Hindi 
& other regional language for guidance of users.
6.5 Safety signs and hazard pictorials are not provided on the machine. It should be provided on the machine to alert person to an existing or potential hazard, identify the hazard, describe the nature of the hazard, explain the consequences of potential injury from the hazard and instruct the persons about how to avoid the hazard.

**TESTING AUTHORITY**

<table>
<thead>
<tr>
<th>G.R. AMBALKAR</th>
<th>Agricultural Engineer</th>
</tr>
</thead>
<tbody>
<tr>
<td>R.K. NEMA</td>
<td>Senior Agricultural Engineer</td>
</tr>
<tr>
<td>HIMAT SINGH</td>
<td>Director</td>
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</table>

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

### 7. APPLICANT'S COMMENTS

<table>
<thead>
<tr>
<th>Para No.</th>
<th>Our reference</th>
<th>Applicant’s comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1</td>
<td>6.1 (iii)</td>
<td>We will incorporate in the manual.</td>
</tr>
<tr>
<td>7.2</td>
<td>6.1 (iv)</td>
<td>We will incorporate in the machine.</td>
</tr>
<tr>
<td>7.3</td>
<td>6.1 (v)</td>
<td>We will incorporate in the machine.</td>
</tr>
<tr>
<td>7.4</td>
<td>6.1 (vi)</td>
<td>We will provide safety guard on the machine.</td>
</tr>
<tr>
<td>7.5</td>
<td>6.2</td>
<td>We will provide accessories for operators safety against pesticides with the machine.</td>
</tr>
</tbody>
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