ENGINE OPERATED KNAPSACK POWER SPRAYER
KISAN KRAFT, KK-JP-908

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

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>Compliance</th>
</tr>
</thead>
<tbody>
<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>Conforms</td>
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<tr>
<td>Cl. 5.17</td>
<td>The fuel and chemical discharge controls shall be in easy access of the operator.</td>
<td>Easy accessible to the operator</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>
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</tbody>
</table>

**PERFORMANCE REQUIREMENTS**

**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 8010 ml/min without gun at 7015 rpm of pump speed and 10 kg/cm² pressure.

**Cl. 6.1.1**
The discharge rate/suction capacity shall be declared by the manufacturer.
- 7 to 8 l/min declared in the manual of submitted by the manufacturer.

**Cl. 6.2 Volumetric Efficiency**
- When determined in accordance with 8.4.1, the volumetric efficiency of the piston/plunger type pump shall be minimum 80 percent.
- The volumetric efficiency is 97.45% which is specified limit.

**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 26.0 kg/cm² with gun against the declaration of 10 to 40 kg/cm².

**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 1.39% with in specified limit (see annexure IV for more details)
### Cl. E.5 Designation

**Cl. E.5.1**

The gun shall be designated by its identification mark AG-C-J for fine cone spray and jet spray pattern, spray angle and discharge at a nominal pressure of 600 kPa.

| Not marked | Does not conform |

### Cl. E.6 Marking

Each gun shall be marked with the following particulars:

- a) Manufacturer’s name or recognized trade mark, and
  - M/s Shandong Huasheng Pesticide Machinery Co. Ltd., China
  - Conforms

- b) Batch or code no.
  - Not Marked
  - Does not conform

### Cl.9 WORKMANSHIP AND FINISH

**(Cl.9 IS: 11313-2007)**

**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.

- Conforms

**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)**

**Cl.10.1 Marking**

Each sprayer shall be marked with the following particulars:

- a) Manufacturer’s name & his registered trade mark
  - Kisan Kraft Machine Tools Pvt. Ltd., Bangalore-560024 (Karnataka)
  - Conforms

- b) Sl. No. and batch or code No.
  - 908/154213
  - Conforms

### 6. COMMENTS AND RECOMMENDATION:

6.1 Engine operated power sprayer Kisan Kraft KK-JP-908 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 M/s Shandong Huasheng Pesticide Machinery Co. Ltd., China, Model -SHPM-908 petrol engine of 0.7 kW at rated speed of 7000 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. 00608/Q21024R3M valid upto 05.10.2016.

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

iii) The gun does not conform the requirement of IS: 3652:1995 Clause E-6 (b). The serial No./batch No. or code No. should be marked on gun.
6.2 The accessories for operator's safety has not been provided with sprayer. It may 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 as well as in operator's manual 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 Following literature are provided by the applicant for reference during test:

b) Material of construction of various components & technical data of engine.

The literatures provided found adequate, however it may be updated as well as spare parts catalogue and service manual may be brought as per IS:8132:1999. Literature may also be provided in Hindi as well as other regional languages for guidance of users.

**TESTING AUTHORITY**

<table>
<thead>
<tr>
<th>Name</th>
<th>Signature</th>
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<tbody>
<tr>
<td>G.R. AMBALKAR</td>
<td></td>
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<tr>
<td>Agricultural Engineer</td>
<td></td>
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<td>R.K. NEMA</td>
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<td>Senior Agricultural Engineer</td>
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<td>HIMAT SINGH</td>
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<td>Director</td>
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Test report compiled by: Sh. Maan Singh, Sr. Technical Assistant

7. **APPLICANT'S COMMENTS**

<table>
<thead>
<tr>
<th>Para No.</th>
<th>Our Reference</th>
<th>Applicant’s Comments</th>
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<tbody>
<tr>
<td>7.1</td>
<td>6.1, 6.2, 6.3 &amp; 6.4</td>
<td>We will improve it at the production level.</td>
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