ENGINE OPERATED KNAPSACK SPRAYER
KISAN KRAFT, KK-KPS-804

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)
| Cl. 5.14.3 | The hose and hose connection shall with stand the test prescribed in 7.2 of IS:10134-1994 | There was no leakage, crack and breakage in hose & hose connection during testing. | Conforms |
| Cl. 5.15 Nozzles | Unless otherwise specified by the purchaser, the nozzle shall conform to the requirements of Annexure F of IS: 3652-1995 | Fixed straight solid cone nozzle. | Conforms |
| Cl. 5.16 | The engine and electric motor shall conform to the requirements given IS:7347-1974 (Reaffirmed 2006) and IS:325-1996 (Reaffirmed 2007) respectively. | The prime mover fitted in the sprayer manufactured by Zhejiang Ousen Machinery Co. Ltd., China, model PX-35 petrol engine of 0.7 kW at rated speed of 6500 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. 07613Q11362RIM valid until 05.09.2016. | -- |
| Cl. 5.16.1 | 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. | The engine and exhaust is opposite to the operator and not expose to harmful exhaust, pipe is covered with guard. | Conforms |
| Cl. 5.17 | The fuel and chemical discharge controls shall be in easy access of the operator. | Easy accessible to the operator. | Conforms |
| Cl. 5.18 | Air pressure chamber shall with stand the test prescribed in 8.7 without any deformation or damage. | No damage found in air pressure chamber. | Conforms |

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

| Cl6.1 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 7370 ml/min without gun at 6513 rpm of engine speed and 10 kg/cm² pressure. | Does not conform |
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. | Conforms

Cl.6.2 Volumetric Efficiency  
Cl.6.2.1 When determined in accordance with 8.4.1, the volumetric efficiency of the piston/plunger type pump shall minimum 80 percent. | The volumetric efficiency is 91.27% which is specified limit. | Conforms

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 25.0 kg/cm² with gun against the declaration of 10 to 40 kg/cm² | Conforms

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 1.78% with in specified limit (see annexure IV for more details). | Conforms

Cl.7 OTHER REQUIREMENTS  
IS:11313-2007 (Reaffirmed 2012)

Cl.7.1 Each sprayer shall be provided with parts catalogue and manual giving detailed information about sprayer, engine, its rated speed along with operational and maintenance instructions and safety precautions. | Manual and parts catalogue is provided by the manufacturer and found adequate in contents. | Conforms

Cl.7.2 Each sprayer shall be provided with a set of necessary tools, suction strainer having aperture size of 300 µm to 425 µm and a measuring jar for lubricating oil. | One set of Gaskets, spanner, ballcock, one gun grip & nut bolt with suction strainer of 350 µm aperture size is provided. | Conforms

Cl.7.3 On the option of the purchaser, the following accessories shall be supplied

a) A set of spray nozzles (conforming to Annexure-F of IS:3652-1995) for different discharge rates, and | Not applicable | --
WORKMANSHIP AND FINISH

Cl.9 IS: 11313-2007 (Reaffirmed 2012)

| 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 |

MARKING AND PACKING

Cl.10 IS: 11313-2007 (Reaffirmed 2012)

<table>
<thead>
<tr>
<th>Cl.10.1 Marking</th>
<th>Each sprayer shall be marked with the following particulars :-</th>
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<tbody>
<tr>
<td>a) Manufacturer's name &amp; his registered trade mark</td>
<td>Marked as Kisan Kraft KK-KPS-804</td>
</tr>
<tr>
<td>b) Sl. No. and batch or code No.</td>
<td>804/112796</td>
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</tbody>
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6. COMMENTS AND RECOMMENDATION:-

6.1 Conformity to Indian Standard

Engine operated knapsack sprayer Kisan Kraft KK-KPS-804 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 Zhejiang Ousen Machinery Co. Ltd. China, model PX-35 petrol engine of 0.7 kW at rated speed of 6500 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. 07613Q11362RIM valid upto 05.09.2016.

ii) Cl. 6.1 IS: 11313:2007-Discharge rate/suction capacity of pump is not as per IS.

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

iv) 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 on marked gun.

6.2 The details of manufacturer and country of origin is not provided on sprayer, packing as well as in literature. It should be provided.

6.3 Safety provisions/safety wear

i) The accessories viz mask, hand gloves and safety goggles for operator’s safety are provided with sprayer.

ii) Safety signs and hazard pictorials are not provided on the machine. It must be provided on the machine for safety of user.

iii) The safety instructions regarding handling of poisonous chemicals & first aid must be provided in operator’s manual for safety of user.