ENGINE OPERATED POWER KNAPSACK SPRAYER
‘AGRIMATE, AMH-709T’

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

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### PERFORMANCE REQUIREMENTS
(\textbf{Cl.6. IS 11313:2007})

| 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 8050 ml/min without gun at 7015 rpm of pump speed and 20 kg/cm$^2$ pressure | Conforms |
| Cl.6.1.1 | The discharge rate/suction capacity shall be declared by the manufacturer | 7.0 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 97.69% 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 30 kg/cm$^2$ with gun against the declaration of 35 kg/cm$^2$. | 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 1.84% with in specified limit (see annexure IV for more details) | Conforms |

### OTHER REQUIREMENTS
(IS 11313:2007)

| Cl. 7 | 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. 7.1 | Each sprayer shall be provided with a set of necessary tools, suction strainer having aperture size of 300$\mu$m to 425$\mu$m and a measuring jar for lubricating oil. | One set of Gaskets & spanner is provided with suction strainer of 350 $\mu$m aperture size is provided with suction pipe. | Conforms |
6. COMMENTS AND RECOMMENDATION:-

6.1 Engine operated power sprayer Agrimate AMH-709T conforms all the clauses of IS: 11313-2007 except requirement specified in the following clause. These should be rectified and incorporated at manufacturing level:-

6.2 The prime mover fitted in the sprayer manufactured by thai Honda manufacturing Co. Ltd. Thailand, model-GX25 petrol engine of 0.72 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 & ISO-14001:2004 certified company as is evident from the certificate registration no. 66100090007 issue date 21.05.2012 and 04104050086 dated 03.01.2014 respectively.

i) 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.


iii) The gun does not conform the requirement of IS: 3652:1995 Clause E-6 For Marking. The make, Model, Serial No./Batch No. or Code No. Should be on marked gun.

iv) Cl.10.1 IS:11313-2007- Sr. No. & batch or code no. of sprayer is not provided.

6.3 The accessories for operator’s safety has not been provided with sprayer. It may be provided for operator’s safety.

6.4 Safety signs and hazard pictorials are not provided on the machine. it should be provided on the machine 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.

6.5 The following literatures are provided by applicant for reference during test.

(a) Operator’s instruction book (English).
(b) Honda GX25T engine - Parts catalogue (English).
(c) Honda GX25- Manual D utilization (printed in Thailand, 5 language, not English). The literature provided are adequate however, the operator’s manual, service & spare parts catalogue/manual may be updated & brought as per IS: 8132:1999 in Hindi & other regional language for guidance of users.