व्यावसायिक परीक्षण रिपोर्ट (प्रारंभिक)
COMMERCIAL TEST REPORT (Initial)

एक कदम स्वच्छता की ओर

संख्या/No.: Machine 133/507
माह / Month: November 2024

INCOMPLETE REPORT

e-AgroCare EA-MT 720 POWER WEEDER

सत्यमेव जयते

भारत सरकार
GOVERNMENT OF INDIA
कृषि एवं किसान कल्याण मंत्रालय
MINISTRY OF AGRICULTURE AND FARMERS WELFARE
कृषि एवं किसान कल्याण विभाग
DEPARTMENT OF AGRICULTURE AND FARMERS WELFARE
उत्तर पूर्वी क्षेत्र कृषि यंत्र प्रशिक्षण एवं परीक्षण संस्थान
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IS 6690 : 1981(Reaffirmed 2012)	:	manually operated Specification for Blades for Rotavator for Power Tillers

4. SPECIFICATIONS

4.1 General:

Make	:	e-AgroCare
Model	:	EA-MT 720
Name and address of manufacturer	:	e-Agro Care Machineries and Equipments Pvt. Ltd. Unit No.61, Sector 5, AURIC, Shendra MIDC, Chh. Sambhajinagar, Maharashtra 431154
Name and address of applicant	:	e-Agro Care Machineries and Equipments Pvt. Ltd. Unit No.61, Sector 5, AURIC, Shendra MIDC, Aurangabad, Maharashtra 431154
Name of machine	:	Power weeder
Type of machine	:	Self propelled, Walk behind
Working size of machine (mm)	:	570
Year of manufacture	:	2024
Serial no. of machine	:	MH/1886/3537/2004/7012

4.2 Details of prime mover:

Make (apa)	:	Zhejiang Welike Garden Machinery Co. Ltd, Jinhua, Zhejiang, P.R.C., China
Model (apa)	:	1E48F
Type	:	2 stroke, Single cylinder, Air cooled, Spark Ignition engine
Year of manufacture	:	2024
Serial Number	:	Not specified
Country of origin	:	**CHINA**
Recommended high idle speed (rpm)	:	9000 ± 100
Recommended low idle speed (rpm)	:	3000 ± 100
Recommended rated speed (rpm)	:	7500

11.4 Wear Analysis of rotor blades:

As the field performance test was not completed, wear analysis of rotor blades was not done.

12. EASE OF OPERATION AND ADJUSTMENTS

Several times it was observed that carburetor was getting jammed with dust particles due to poor functioning of the air cleaner. As carburetor was getting jammed, accelerator was not working properly.

13. DEFECTS, BREAKDOWNS AND REPAIRS

1.During field performance test after 14.75 hours of field operation, it was observed that engine power was not getting transmitted to the rotor shaft. After inspecting it was found that asbestos lining of clutch shoe was completely removed and found in powder form. Also, shoe assembly was found damaged.

2. Bumper guard provided at the front of the machine was found broken just after 6.2 hours of field performance test.

3. During field performance test several times it was observed that carburetor was getting jammed with dust particles due to poor functioning of the air cleaner. As carburetor was getting jammed, accelerator was not working properly.

14. COMPONENTS / ASSEMBLY INSPECTION AND ASSESSMENT OF WEAR

14.1 Engine: NR

14.2 Clutch:NR

14.3 Transmission gears:NR

14.4 Rotary drive unit: NR

15. COMMENTS AND RECOMMENDATIONS

15.1 During field performance test after 14.75 hours of field operation, it was observed that engine power was not getting transmitted to the rotor shaft. After inspecting it was found that asbestos lining of clutch shoe was completely removed and found in powder form. Also, shoe assembly was found damaged. This should be looked into for quality improvement.

15.2 Bumper guard provided at the front of the machine was found broken just after 6.2 hours of field performance test. This should be looked into for quality improvement.

15.3 During field performance test several times it was observed that carburetor was getting jammed with dust particles due to poor functioning of the air cleaner.

As carburetor was getting jammed, accelerator was not working properly. This should be looked into for quality improvement.

15.4 Safety wears such as hand gloves, mask, helmet, ear plug etc. were not provided with the machine. It is advised to provide safety wears along with each machine for safety of operator.

15.5 The hardness and chemical composition of rotary blades does not conform to the requirement of IS 6690:1981 (Reaffirmed 2012). This may be looked into for corrective action.

15.6 Noise at operator's ear level was observed on much higher side against dangerlimit of 90 dB(A) as specified by the International Labour Organization (ILO) for continuous exposure of 8 hours per day. **This calls for reduction in noise level to improve the operator's comfort & safety.**

15.7 The amplitude of mechanical vibration marked as (*) is on drastically higher side and is directly concerned with operator's health, safety and comfort. Besides, it is also adversely affecting the useful life of machine components. In view of above, this deserves to be given priority for corrective action.

15.8 Labeling plate of machine should contain information such as name and address of manufacturer, country of origin, year of manufacture, size, rated power, fuel used etc.This should be looked into for corrective action.

15.9 **Adequacy of Literature**

The following literature in English language was provided for reference during testing:

- Operator's/ Service manual
- Parts catalogue

It is recommended to bring out the manual in Hindi and other vernacular languages as per IS: 8132-1999.

TESTING AUTHORITY

(M.R. PATIL)
SENIOR AGRICULTURAL ENGINEER

(P.KAMALABAI)
DIRECTOR

Draft test report compiled by - **Shri J. Bhon Singh, STA**

16. APPLICANT'S COMMENTS

Para No.	Our Reference	Applicant's Comments
16.1	15.1, 15.2	We will ensure quality improvement in future production.
16.2	15.3	We will take up the issue with engine manufacturer and ensure quality improvement in future.
16.3	15.4	Recommended safety wears will be provided with each machine in future.
16.4	15.5	We will ensure chemical composition and hardness of blades as per recommended IS standards.
16.5	15.6, 15.7	We will take corrective action to ensure safety of operator.
16.6	15.8	It will be done as per recommendation in future production.
16.7	15.9	Literature will be brought out as per recommended IS standards.

ANNEXURE

FIELD PERFORMANCE RESULTS (INCOMPLETE TEST)

Place of Test: NERFMTTI Farm, Biswanath Chariali, Biswanath, Assam

Sl. No.	Parameters	Test I	Test II	Test III
1	Date of test	23.09.2024	24.09.2024	25.09.2024
2	Net test duration (h)	5.0	3.67	6.08
3	Furrow length (m)	54.0	50.2	42.6
4	Type of soil	Light		
5	Bulk density (g/cc)	1.61	1.58	1.55
6	Soil moisture (%)	9.4	8.5	7.4
7	Previous treatment	Nil		
8	Forward speed (kmph)	1.77	1.72	1.77
9	Av. Depth of cut (cm)	6.79	7.21	7.24
10	Av. width of cut (m)	0.576	0.570	0.565
11	Area covered (ha/h)	0.088	0.083	0.086
12	Time required for one ha (h)	11.43	12.05	11.63
13	Field efficiency (%)	85.78	84.70	86.00
14	Av. height of weeds (cm)	11.1	11.0	9.3
15	Av. number of weeds per m^2 (Before operation)	205	193	167
16	Av. number of weeds per m^2 (After operation)	30	30	24
17	Weeding efficiency (%)	85.18	84.44	85.76
18	Fuel Composition			
	- l/h	1.20	1.16	1.17
	- l/ha	13.71	13.97	13.60