



INCOMPLETE REPORT



MHASWADKAR AUTOLINES PVT LTD, BAM135EB, POWER WEEDER



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

NORTH EASTERN REGION FARM MACHINERY TRAINING & TESTING INSTITUTE

बिश्वनाथ चारिआलि, जिला - बिश्वनाथ (असम)

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[AN ISO 9001:2015 CERTIFIED INSTITUTION]

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4. SPECIFICATIONS

4.1 General:

Make : MHASWADKAR AUTOLINES PVT LTD
 Model : BAM135EB
 Name and address of manufacturer : **M/s Chongqing Dinking Power Machinery Co., Ltd., Caojie Development Area, Industrial Park, Hechuan, Chongqing, CHINA**
 Name and address of applicant : **Mhaswadkar Autolines Pvt Ltd, 283/3/1B, Karanje, New Radhika Road, Near Market Yard, Satara, 415001, Maharashtra**
 Name of machine : Power Weeder
 Type of machine : Self propelled, Walk behind
 Working size of machine (mm) : 600
 Year of manufacture : 2023
 Serial no. of machine : 23053

4.2 Details of prime mover:

Make : KAMA
 Name and address of manufacturer : **M/s Chongqing Dinking Power Machinery Co., Ltd., Caojie Development Area, Industrial Park, Hechuan, Chongqing, CHINA**
 Model : 188-3F
 Type : 4 stroke, Single cylinder, Air cooled, Diesel Engine
 Year of manufacture : 2023
 Serial Number : K230406228
 Country of origin : **CHINA**
 Recommended high idle speed (rpm) : 3600 ± 100
 Recommended low idle speed (rpm) : 1800 ± 200





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11. HARDNESS AND CHEMICAL COMPOSITION OF ROTOR BLADE

11.1 Hardness of rotor blade:

The surface hardness of blade was recorded as under :

	As per IS 6690:1981 (Reaffirmed 2012)	As observed (HRC)	Remarks
At edge portion	56 ±3 HRC	46.9	Does not conform
At shank portion	37 to 45 HRC	46.8	Does not conform

11.2 Chemical composition of rotor blade:

Constituents	As per IS 6690:1981 (Reaffirmed 2012)		Composition as observed (% by weight)	Remarks
	Carbon Steel (%)	Silicon Manganese Steel (%)		
Carbon (C)	0.70 -0.85	0.50-0.60	0.727	Conforms
Silicon (Si)	0.10 -0.40	1.50-2.00	0.580	Does not conform
Manganese (Mn)	0.50 -1.0	0.50-1.00	0.944	Conforms
Sulphur (S)	0.05(max)	0.05(max)	0.009	Conforms
Phosphorous (P)	0.05(max)	0.05(max)	0.011	Conforms

12. FIELD PERFORMANCE TEST

The field tests were conducted for 26.00 hours of field operation for testing the said Power Weeder. The field tests were conducted at rated rpm of 3400. The detailed test results are represented in the Annexure and summarized in the ensuing table:

Sl.No.	Parameters	Observations
1	Type of soil	Light
2	Soil moisture (%)	9.1 to 10.50
3	Bulk density of soil (g/cc)	1.56 to 1.60
4	Forward Speed of operation (kmph)	1.26 to 1.30
5	Depth of cut (cm)	6.45 to 6.94
6	Width of cut (m)	0.600 to 0.604
7	Area covered (ha/h)	0.062 to 0.065
8	Time required for one ha (h)	15.38 to 16.13
9	Field efficiency (%)	80.52 to 84.21
10	Weeding efficiency (%)	81.62 to 83.11
11	Fuel consumption	l/h : 0.700 to 0.900
		l/ha : 10.77 to 14.52

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15. COMPONENTS / ASSEMBLY INSPECTION AND ASSESSMENT OF WEAR

- 15.1 Engine:**
Components/Assembly inspection in respect of engine was not done due to incomplete test as engine test could not be conducted.
- 15.2 Clutch:** No noticeable defects were observed.
- 15.3 Transmission gears:** No noticeable defects were observed.
- 15.4 Rotary drive unit:**
The rotary drive unit was dismantled and all the components were found in normal condition.

16. COMMENTS & RECOMMENDATIONS

- 16.1** During engine performance test, it was observed that the engine behavior was not normal and hence maximum power and maximum torque was not obtained due to which engine test could not be conducted. This issue was observed several times and therefore incomplete report has been issued. This should be looked into.
- 16.2** During initial inspection of the machine, ball bearing of back rotary gear box main shaft was found damaged. On request of the applicant and approval of the competent authority the bearing was replaced with new one. This should be looked into.
- 16.3** Over heating of back rotary gearbox was observed. On request of the applicant and approval of the competent authority, main shaft of back rotary gearbox was replaced with new one. This should be looked into.
- 16.4** Noise at operator's ear level was observed on higher side against danger limit of 90 dB (A) as specified by 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.**
- 16.5** The amplitude of mechanical vibration marked as (*) was on drastically higher side and is directly concerned with operator's health, safety and comfort. Besides, it is also adversely affect the useful life of the component in view of above this deserves to be given top priority for corrective action.
- 16.6** The hardness and chemical composition of rotary blades does not conform to the

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requirement of IS 6690:1981 (Reaffirmed 2012). This may be looked into for corrective action.

16.7 During oil pull over test percentage loss of oil was observed on higher side. It should be looked into corrective action.

16.8 As the machine is imported, name and address of manufacturer and country of origin shall be mentioned on the labelling plate.

16.9 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)

AGRICULTURAL ENGINEER

(P. KAMALABAI)
DIRECTOR



Draft test report compiled by - **Shri J. Bhon Singh**
Sr. Technical Assistant

17. APPLICANT'S COMMENTS

Para No.	Our Reference	Applicant's Comments
17.1	16.1 to 16.9	We will take necessary action as per comments and recommendations in the test report for improvement in future production.