

व्यावसायिक परीक्षण रिपोर्ट
COMMERCIAL TEST REPORT

संख्या/ No.: Power weed-178/3046/2023

माह/Month: June, 2023

THIS TEST REPORT VALID UP TO : 30th June, 2028



**MAHAN, MBP-200,
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

उत्तरी क्षेत्र कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

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Silicon (Si)	0.10 -0.40	1.50-2.00	0.40 (Max.)	0.49	Partially conform to Boron 28 MnCrB5
Manganese (Mn)	0.50 -1.00	0.50-1.00	1.10-1.40	0.57	Partially conform to carbon steel & Silicon manganese steel
Sulphur (S)	0.05 (Max.)	0.05 (Max.)	0.035 (Max.)	0.04	Conforms
Phosphorous (P)	0.05 (Max.)	0.05 (Max.)	0.025 (Max.)	0.02	Conforms
Chrome (Cr)	--	--	0.3-0.6	0.08	Does not conform
Boron (B)	--	--	0.0008-0.005	0.003	Conforms

* Power weeder blade partially conforms to Boron 28 MnCrB5.

11. RUNNING – IN

The power weeder was run-in for 0.17 and 1.00 hours at 3600 no load rated engine rpm respectively before field performance test as recommended by the applicant. All the fasteners were checked and tightened thereafter.

12. FIELD TEST

The field tests under dry land condition were conducted for 26.73 hours. The field tests were conducted at rated speed 3600 rpm. In all, 5 tests trials were conducted in sandy loam soil at N.R.F.M.T.T.I farm, Hisar. The summary of the field test for dry land operation is given in table-4.

Crop parameters

- i) Type of weed - Seasonal weeds
- ii) Height of weed, cm - 10 to 22

Table 4: SUMMARY OF FIELD PERFORMANCE TEST

Sr. No.	Parameter	Range
i)	Type of soil	Sandy loam
ii)	Soil moisture, %	6.20 to 8.50
iii)	Bulk density of soil, g/cc	1.25 to 1.28
iv)	Speed of operation, kmph	1.50 to 1.67
v)	Depth of cut, cm	5.13 to 5.97
vi)	Width of cut, m	0.82 to 0.84
vii)	Area covered, ha/h	0.105 to 0.115
viii)	Time required for one ha	8.70 to 9.52
ix)	Fuel consumption	0.96 to 1.50
	l/ha	8.35 to 13.89
x)	Weeding efficiency, %	87.31 to 88.94
xi)	Field efficiency, %	83.94 to 85.71



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23.	Depth control mechanism	Must be provided	Provided	Conforms
24.	Provision for transport wheels	Must be provided	Provided	Conforms
25.	Provision for cover on exhaust	Must be provided	Provided	Conforms
26.	Direction of exhaust emission away from operator	Must be provided	Provided	Conforms
27.	Marking/labeling machine	The labeling plate should be riveted on the body of machine having Name and address of manufacturer & Applicant, Country of origin, Make, Model, Year of manufacturer, Serial number, Engine number, Engine HP, rated rpm & SFC.	Only year of manufacturer serial no. and model are provided on labeling plate	Partially conform
28.	Literature	Operator manual, service manual and Parts catalogue should be provided.	Provided	Conforms

16. COMMENTS & RECOMMENDATIONS

16.1 Mechanical vibration

The amplitude of mechanical vibration marked as (*) on the relevant chapter, are on drastically higher side. It is not just directly concerned with operator's health, safety and comfort, but also adversely affects the useful life of the components. In view of above, this deserve to be given top priority for corrective action.

16.2 The hardness of blades does not conform to the requirements of IS: 6690-1981. This needs to be looked into for corrective action.

16.3 The chemical composition at blades does not conform to the requirements of IS: 6690-1981. This needs to be looked into for corrective action.

16.4 The thickness of rotor blade does not meet the requirement as per Critical Technical Specification. This needs to be looked into for corrective action.

16.5 The piston ring end gap of the second compression ring of the engine is observed 1.80 mm, which is more than the wear permissible limit. This needs to be looked into for corrective action.

16.6 The material of rotor shaft does not conform to the requirement of Critical Technical Specification. This needs to be looked into for corrective action.

16.7 The labeling plate provided on the power weeder does not meet the requirement as per Critical Technical Specification. This needs to be looked into for corrective action.


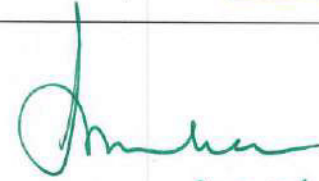
17. TECHNICAL LITERATURE

The following literatures were provided by the applicant.

- i) Operator manual
- ii) Parts catalogue
- iii) Service manual

However, the manual needs to be updated as per IS: 8132-1999

TESTING AUTHORITY

Er. SANJAY KUMAR AGRICULTURAL ENGINEER	
DR. MUKESH JAIN DIRECTOR	 20.06.2023

Test report is compiled by Sh. Ajay Singh Yadav, Sr. Technician.

18. APPLICANT'S COMMENTS

Para no.	Our reference	Applicant's comments
18.1	16.1, 16.2, 16.3, 16.4, 16.5, 16.6 & 16.7	Noted the same and we will take corrective actions and very soon a better available solution will be implemented in future production.

