

व्यावसायिक परीक्षण रिपोर्ट  
COMMERCIAL TEST REPORT

संख्या/ No.: Powerweeder-111/2669/2021  
माह/ Month: February, 2021

**THIS TEST REPORT VALID UP TO : 28<sup>th</sup> February, 2026**



**ASPEE JONATHAN, CHB35/2S/TW  
BACKPACK POWER WEEDER**



भारत सरकार

Government of India

कृषि एवं किसान कल्याण मंत्रालय

Ministry of Agriculture and Farmers Welfare

कृषि, सहकारिता एवं किसान कल्याण विभाग

Department of Agriculture, Cooperation and Farmers Welfare

उत्तरी क्षेत्र कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

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Page 1 of 16

9. **HARDNESS & CHEMICAL COMPOSITION OF BLADES:** Hardness & chemical analysis of primary element of the blade were carried out as per IS: 6690-1981. The details of same as given in table 3 & 4.

9.1 **Table 3 : Hardness of blades**

	Requirement as per IS: 6690-1981 (HRC)	Hardness (HRC) as observed	Remarks
At edge portion	56±3	10 (Average)	Does not conform
At shank portion	37 to 45	11.4 (Average)	Does not conform

9.2 **Table 4 : Chemical analysis of rotary blade**

Elements	Requirements as per IS: 6690-1981 (%)	As observed (%)	Remarks
1.	2.	3.	4.
Carbon	0.50 to 0.60	0.0760	Does not conform
Manganese	0.50 to 1.00	0.2413	Does not conform
Silicon	1.50 to 2.00	0.2941	Does not conform
Phosphorous	0.05 (Max.)	0.0070	Conforms
Sulphur	0.05 (Max.)	0.0412	Conforms

**10. RUNING IN**

In the agreement with applicant's representative the Power weeder was run-in for 0.58 hour before the actual test. All the fastness was checked tightened thereafter.

**11. FIELD TEST**

The field tests under dry land condition were conducted for 29.2. During the field tests engine speed was adjusted to the rated 6500 rpm. In all, 5 tests trials were conducted in sandy loam soil at the NRFMTTI farm, Hisar. The summary of the field test for dry land operation is represented in table-3.

**Crop parameters**

- i) Type of weed - Seasonal weeds (Chenopodium grass)  
ii) Height of weed, cm - 4 to 6.5

**Table 5: SUMMARY OF FIELD PERFORMANCE TEST**

Sl. No.	Parameter	Range
i)	Type of soil	Sandy loam
ii)	Average Soil moisture, %	15 to 16.83
iii)	Average Bulk density of soil, g/cc	1.530 to 1.590
iv)	Average Speed of operation, kmph	0.60 to 0.64
v)	Average depth of cut (cm)	4.44 to 5.60
vi)	Average Width of cut, m	0.26 to 0.29
vii)	Average Area covered, ha/h	0.012 to 0.013
viii)	Average Time required for one ha	72.22 to 83.33
ix)	Average Fuel consumption	
	l/h	0.870 to 0.920
	l/ha	68.18 to 72.50

x)	Average Weeding efficiency (%)	:	77 to 83
xi)	Average Field efficiency (%)	:	73 to 80

## 12. ADJUSTMENT, DEFECTS, BREAKDOWNS & REPAIR

After field test part no. CHB/034/2S (engine supporter 2 stroke) welding cracked.

## 13. COMPONENTS/ASSEMBLY INSPECTION AND ASSESSMENT OF WEAR

### 13.1 Wear of blades:

#### 13.1.1 Mass basis:

The wear of the rotary weeder blades was measured after 29.78 hrs. of field operation and the observations are as under:

Sl. No.	Initial mass (g)	mass after 29.78 hrs.(g)	Loss of mass (g)	Percent wear (%)	Percent wear per hour
1	1172.60	1145.20	27.4	2.34	0.08
2	1161.30	1153.50	7.8	0.67	0.02

## 14. CRITICAL TECHNICAL SPECIFICATIONS

Deferred till 31.03.2021 vide Ministry O.M. No. 13-13/2020-M&T(I&P) dated 22.12.2020.

## 15. COMMENTS & RECOMMENDATIONS

### 15.1 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 affect the useful life of the components. In view of above, this deserved to be given top priority for corrective action.

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

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

15.4 Pertinent instructions are not mentioned. It **MUST** be mentioned.

15.5 The observed serial no. BATT035 as per labeling plate against serial no. CHB35/2S/TW-021 as per specification. It **MUST** be looked into for corrective action.

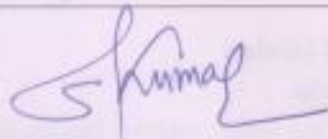
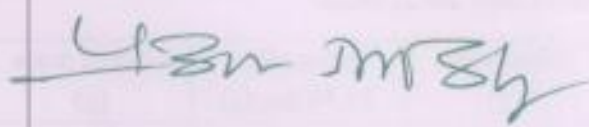




**16. TECHNICAL LITERATURE**

One booklet entitled "Instruction manual" was provided for reference during test. The same, however, needs to be updated as per IS-8132-1999.

**TESTING AUTHORITY**

SANJAY KUMAR AGRICULTURAL ENGINEER	
P. K. PANDEY DIRECTOR	

Draft test report compiled by Girdhari Lal, Technician

**17. APPLICANT'S COMMENTS**

Para No.	Our reference	Applicant comments
17.1	15.1, 15.2, 15.3, 15.4 & 15.5	We will do needful.