

प्रारंभिक व्यावसायिक परीक्षण रिपोर्ट  
INITIAL COMMERCIAL TEST REPORT

संख्या/No. CSIR/CMERI/FMTTC/2025/015  
माह/Month: March, 2025

THIS TEST REPORT VALID UP TO

: 29<sup>th</sup> February, 2032



**AL-BURHAN INTERNATIONAL  
BRUSH CUTTER  
(MODEL NO. - BC 52 BP)**



सत्यमेव जयते  
Government Of India



कृषि मशीनरी प्रशिक्षण और परीक्षण केंद्र  
**Farm Machinery Training and Testing Centre**  
सीएसआईआर- केन्द्रीय यांत्रिक अभियांत्रिकी अनुसंधान संस्थान  
**CSIR - Central Mechanical Engineering Research Institute**  
महात्मा गांधी एवेन्यू, दुर्गापुर  
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CSIR/CMERI/FMTTC/2025/015	AL-BURHAN INTERNATIONAL BRUSH CUTTER (MODEL NO.- BC 52 BP) (INITIAL COMMERCIAL TEST)
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Name of the Machine	: Brush Cutter
Type of Machine	: Engine Operated Brush Cutter Back Pack
Make	: RAJA
Model	: BC 52 BP
Name and address of Manufacturer	: Zhejiang Green Power Machinery Incorporated CO LTD, Tang Village, Jian Tiao Twon, Sanmen County, Taizhou City, Zhejiang, China.
Name and address of Applicant	: Al-Burhan International, 16-B.R.B. Basu Road, 1 Floor, Kolkata-700001, West Bengal, India.
Test Conducted at	: Farm Machinery Training and Testing Centre CSIR- Central Mechanical Engineering Research Institute, M G Avenue, Durgapur, Pin – 713209, West Bengal.

**THIS TEST REPORT VALID UP TO: 29<sup>th</sup> February 2032**  
[vide DAC&FW OM No. 13-22/2020- M&T (I&P) dated 12.12.2023]



Report No.: CSIR/CMERI/FMTTC/2025/015

Month: March

Year: 2025

**CSIR - Central Mechanical Engineering Research Institute,  
Durgapur - 713209  
(W.B.), INDIA**

Report prepared by

*[Signature]*

Report verified by

*[Signature]*

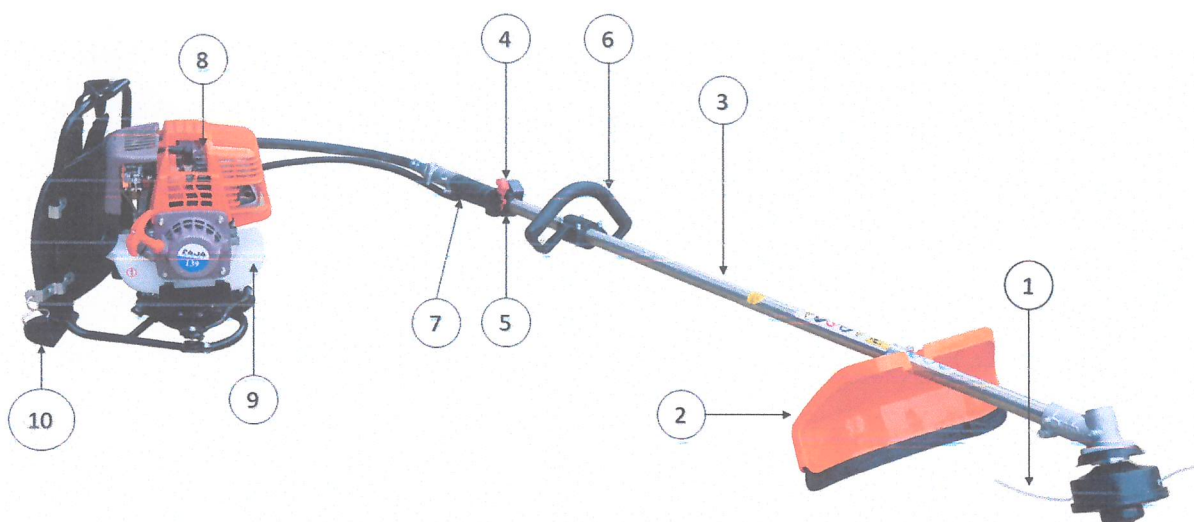
Farm Machinery Training and Testing Centre,  
CSIR-Central Mechanical Engineering Research Institute, Durgapur  
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## 5 SPECIFICATIONS

### 5.1 General

Name of the Machine	: Brush Cutter
Type of Machine	: Engine Operated Brush Cutter Back Pack
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Name and address of Manufacturer	: Zhejiang Green Power Machinery Incorporated CO LTD, Address – Tang Village, Jian Tiao Twon, Sanmen County, Taizhou City, Zhejiang, China.
Name and address of Applicant	: Al-Burhan International, 16-B.R.B. Basu Road, 1 <sup>st</sup> Floor, Kolkata-700001, West Bengal, India.
Country of origin	: India
Frame serial no	: NA
Year of manufacturer	: 2023
Recommended use	: Weed/Bush Cutting



**Fig. 2: Schematic View of Brush Cutter**

- |                              |                                 |                      |
|------------------------------|---------------------------------|----------------------|
| 1. Nylon rope                | 2. Grass deflector              | 3. Frame pipe        |
| 4. Throttle cum clutch lever | 5. Emergency engine stop switch | 6. Right hand Holder |
| 7. Left Hand holder          | 8. Engine                       | 9. Fuel tank         |
| 10. Shoulder belt            |                                 |                      |

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Subrata Kr Mandal



**12.3 Labor requirement**

Two skilled operator was needed to operate the brush cutter continuously. Additionally, one more labor is needed to gather the collected/ bush /weeds.

**12.4 Adequacy of power of prime mover**

The power of prime mover was found adequate.

**12.5 Wear analysis of critical components**

Components	Duration of operation (h)	Initial length (mm)/ mass (gm)	Length/ Mass after operation (gm)/(mm)	Loss of length /mass (gm)/(mm)	Percentage wear (%)	Percentage wear on hour basis (%)
Nylon rope	8.40	2020	254	1766	87.43	10.4
Triangular blade	9.25	251.97	224	27.97	11.10	1.2

**13 EASE OF OPERATION, ADJUSTMENT AND SAFETY**

No problem was observed during the test except, the fatigue was observed during the operation of the machine due to excessive mechanical vibration and noise.

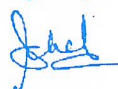
**14 DEFECTS, BREAKDOWN AND REPAIR**

No breakdown occurred during 18.65 hours of operation.

**15 COMMENTS AND RECOMMENDATIONS**

- 15.1** The noise level at the OEL lever is higher, which needs to be reduced to improve the operator's comfort and safety.
- 15.2** The mechanical vibration is on the higher side. It is not just directly affect the operator's health, safety, and comfort, but also adversely affect the useful life of the components. Corrective action needs to be taken to reduce the vibration level.
- 15.3** The chemical composition of cutter blade material doesn't meet the requirement as per IS: 6025-1982. It needs to be looked into for corrective actions.
- 15.4** User's Manual book, Parts catalogue & Service manual are need to be updated as per BIS Standard.
- 15.5** The labeling plate is not provided with this machine and need to be included.

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## 16 TECHNICAL LITERATURE

The following literatures are provided by the applicant during the test along with the application form.

- User's manual book
- Parts' catalogue
- Service manual

These manuals need to be update as per IS: 8132-1999.

## TESTING AUTHORITY

Report Prepared by	Sr. Technical Officer, CSIR-CMERI Farm Machinery Testing Centre	<i>J. S. J.</i> 24/03/2025
Report Verified & Approved by	In-Charge, CSIR-CMERI Farm Machinery Testing Centre	<i>Sudhakar Kumar</i> 24/3/2025
Report Approved for release by	Head, Business Development Unit, CSIR-CMERI, Durgapur	<i>Prasanna</i> 24/03/2025



## 17 APPLICANT'S COMMENTS

Para No.	Our Reference	Applicants Comments
17	15.1 to 15.5	We will abide by all the suggestions to make our machine more user friendly.

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Attachment used : With Nylon Rope Assembly

Place of test : CSIR-CMERI, Durgapur

Usage : Seasonal grass cutting

Sl No.	Parameters	Test Trails		
		I	II	III
1	Date of Test	27.08.2024	28.08.2024	29.08.2024
2	Net Test Duration	2.92	2.68	2.80
3	Type of Grass	Seasonal Grass	Seasonal Grass	Seasonal Grass
4	Avg. height of Grass (mm)	162	158	200
5	Avg. No. of grass stem	960	1020	1130
6	Mass of grass per sq.m (kg)	0.72	0.79	0.82
7	Avg. dia of Grass (mm)	1.10	1.30	1.25
8	Mass of grass harvesting (kg/h)	9.5	13.5	14.2
9	Rate of Work (ha/h)	0.088	0.103	0.092
10	Time required for 1 ha (h)	22.74	19.55	21.69
11	Fuel Consumption			
	-l/h	0.42	0.42	0.40
	-l/ha	9.55	8.24	8.74

Annexure - II

### DETAILS OF OPERATOR

PARAMETERS		OPERATOR
Age (Year)	:	34
Height (cm)	:	160
Weight (kg)	:	72

Report prepared by

*[Signature]*

Report verified by

*[Signature]*