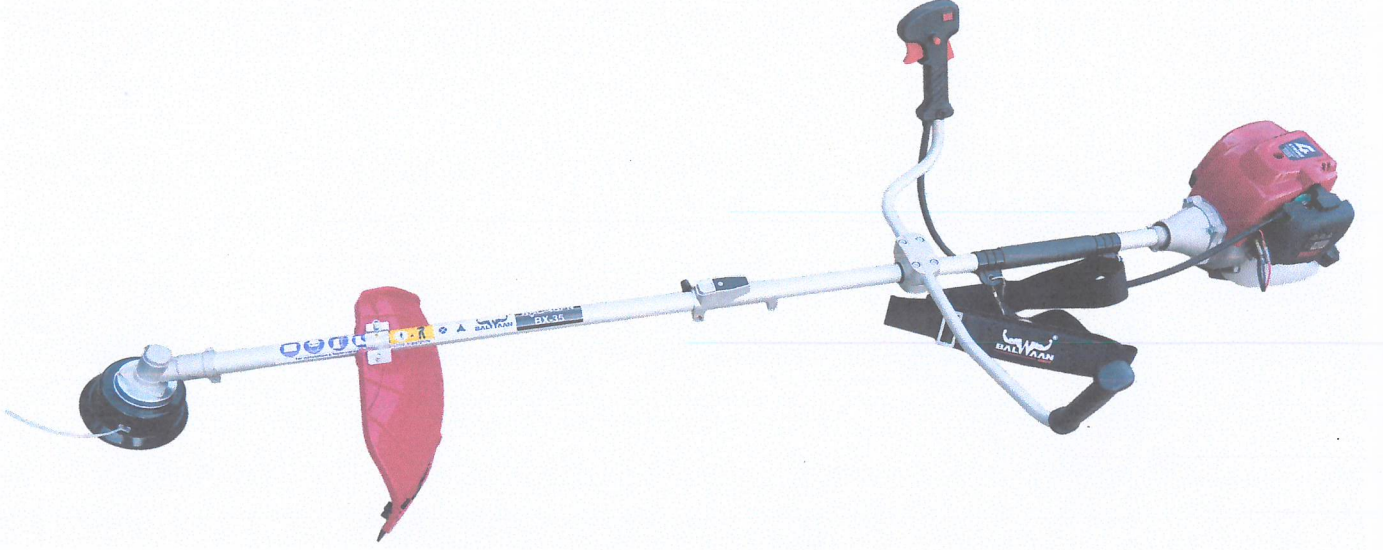


प्रारंभिक व्यावसायिक परीक्षण रिपोर्ट  
INITIAL COMMERCIAL TEST REPORT

संख्या/No. CSIR/CMERI/FMTTC/2024/075  
माह/Month: December, 2024

THIS TEST REPORT VALID UP TO : 30<sup>th</sup> November 2031



**MODISH TRACTOR AURKISAN PVT. LTD  
BRUSH CUTTER  
(MODEL NO.- BX-35)**



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  
**Mahatma Gandhi Avenue, Durgapur**  
पश्चिम बंगाल - 713209  
West Bengal - 713209  
Website: <https://cmeri.res.in>

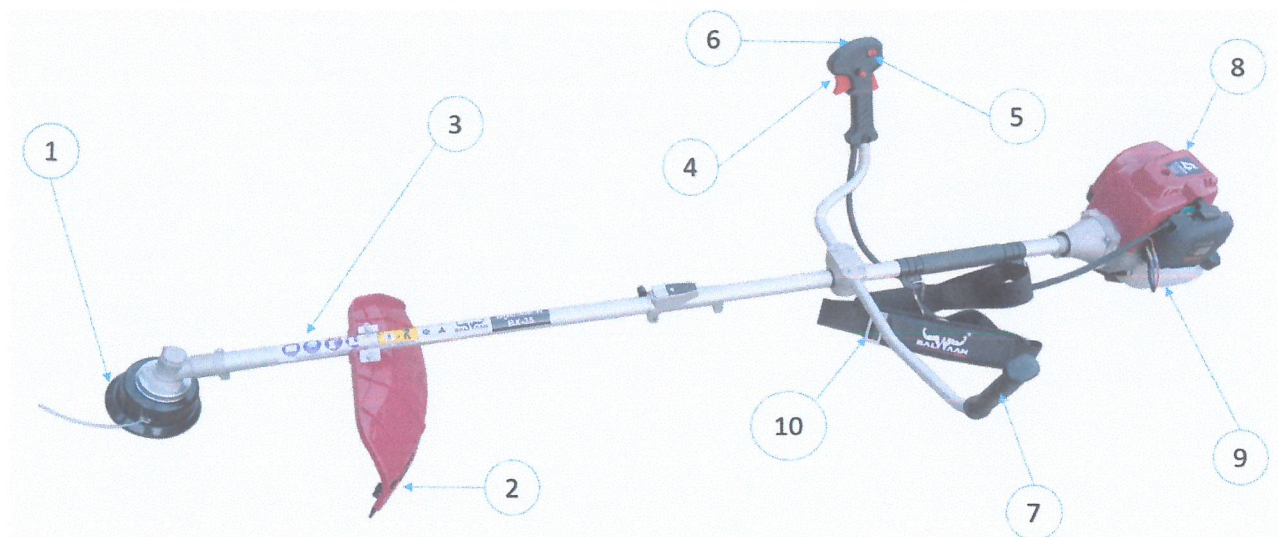
**E-mail:** [fmttc.cmeri@gmail.com](mailto:fmttc.cmeri@gmail.com)

Telephone: 9434592007 / 7001361295  
Fax: +91-343-2546745

## 5. SPECIFICATIONS

### 5.1 General

Name of the Machine	: Brush Cutter
Type of Machine	: Self- Propelled Side Pack Brush Cutter
Make	: Balwaan Krishi
Model	: BX-35
Name and address of Manufacturer	: Modish Tractor Aurkisan Pvt. Ltd. 17-C Sharma Colony, Extension. 22, Godam, Jaipur – 302006, Rajasthan
Name and address of Applicant	: Modish Tractor Aurkisan Pvt. Ltd. 17-C Sharma Colony, Extension. 22, Godam, Jaipur – 302006, Rajasthan
Country of origin	: India
Serial no	: Not Specified
Year of manufacturer	: 2024
Recommended use	: Weed / Brushes / Plants etc.



*Fig. 2: Schematic View of Brush Cutter / Weed Slasher*

- |                                      |                           |               |
|--------------------------------------|---------------------------|---------------|
| 1. Nylon rope                        | 2. Grass deflector        | 3. Frame pipe |
| 4. Throttle cum clutch lever         | 5. Engine stopping switch | 6. RHS handle |
| 7. LHS Handle                        | 8. Engine                 | 9. Fuel tank  |
| 10. Hook for attaching shoulder belt |                           |               |

Report prepared by

*[Signature]*

Report verified by

*[Signature]*

## 12. FIELD TEST

Field test for 23.76 hrs. duration comprising of seasonal grass cutting with nylon rope and perennial weed cutting using Triangular blade attachments were carried out for 11.92 hrs. and 11.83 hrs. respectively. Detailed results of field tests are shown in Annexure-I summarized in the ensuing table. Details about the operator are shown in Annexure-II.

Sl No.	Parameters	Perennial Weed	Seasonal Grass
	Type of Blade	3-T Blade	Nylon Cutter
1	Field Condition	Level	Level
2	Intensity of Grass	High	High
3	Avg. height of Grass (cm)	515 to 595	149 to 178
4	Avg. No. of grass stem per sq.m	225 to 289	435 to 648
5	Avg. dia. of Grass (mm)	1.32 to 1.38	1.1 to 1.6
6	Mass of grass harvesting (kg/h)	16.9 to 18.9	9.7 to 13.8
7	Rate of Work (ha/h)	0.049 to 0.091	0.060 to 0.076
8	Time required for 1 ha (h)	27.41 to 51.64	27.49 to 29.10
9	Fuel Consumption		
	-l/h	0.97 to 1.15	1.07 to 1.16
	-l/ha	22.48 to 48.80	31.21 to 36.25

### 12.1 Perennial weed cutting using Triangular blade

#### 12.1.1 Rate of work

- i) The average area covered (rate of work) was observed as 0.049 to 0.091ha/h.
- ii) Average time required for one hectare was observed as 27.41 to 51.64 hours.
- iii) Average number of perennial grass in one square meter was 225 to 289.
- iv) Average mass of perennial grass cut was 16.9 to 18.9 kg/h.

#### 12.1.2 Fuel consumption

Average fuel consumption was observed as 0.97 to 1.15 lit/h.

### 12.2 Seasonal Grass cutting using Nylon Rope Assembly

#### 12.2.1 Rate of work

- i) The average area covered (rate of work) was observed as 0.060 to 0.076 ha/h.
- ii) Average time required for one hectare was observed as 27.49 to 29.10 hours.
- iii) Average number of Seasonal Grass in one square meter was 435 to 648.
- iv) Average mass of Seasonal Grass cut was 9.7 to 13.8 kg/h.

#### 12.2.2 Fuel consumption

Fuel consumption was observed as 1.07 to 1.16lit/h

### 12.3 Labour requirement

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

Report verified by  
Subrata Kumar Mandal

Report prepared by  


CSIR/CMERI/FMTTC/2024/075	<b>MODISH TRACTOR AURKISAN PVT. LTD</b> <b>BRUSH CUTTER</b> <b>(MODEL NO.- BX-35)</b> <b>(INITIAL COMMERCIAL TEST)</b>
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**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/ mass (gm/mm)	Length Mass after operation (gm/mm)	Loss of length /mass (gm/mm)	Percentage wear (%)	Percentage wear on hour basis (%)
Nylon rope	11.92	2515	250	2265	90.1	7.6
Triangular blade	11.83	280.51	267.13	13.38	4.8	0.4

### 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 24.76 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 partially meet the requirement as per IS:1511-79 (RA 2012). It needs to be updated.
- 15.4** No labelling plate is riveted on the machine. A Labelling plate should be riveted on the machine with following information.
- |   |                      |
|---|----------------------|
| a. Name and address of the manufacturer | b. Country of origin |
| c. Make                                 | d. Model             |
| e. Year of manufacturer                 | f. Serial no         |
| g. Engine number                        | h. Engine HP         |
| i. Rated rpm                            |                      |

Report prepared by

*[Signature]*

Report verified by  
*[Signature]* K. K. Mandal

CSIR/CMERI/FMTTC/2024/075	<b>MODISH TRACTOR AURKISAN PVT. LTD</b> <b>BRUSH CUTTER</b> <b>(MODEL NO.- BX-35)</b> <b>(INITIAL COMMERCIAL TEST)</b>
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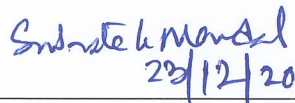
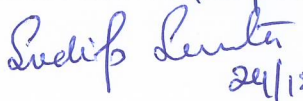
### 16. TECHNICAL LITERATURE

The following literatures are not provided by the applicant during the test along with the application form.

- a) User's manual book
- b) Parts' catalogue
- c) Service manual

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

### TESTING AUTHORITY

Report Prepared by	Sr. Technical Officer, CSIR-CMERI Farm Machinery Testing Centre	 23/12/2024
Report Verified & Approved by	In-Charge, CSIR-CMERI Farm Machinery Testing Centre	 23/12/2024
Report Approved for release by	Head, Business Development Unit, CSIR-CMERI, Durgapur	 24/12/24

### 17. APPLICANT'S COMMENTS

Para No.	Our Reference	Applicants Comments
17	15.1 to 15.4	It's ok corrective action will be taken.

