

व्यावसायिक परीक्षण रिपोर्ट  
COMMERCIAL TEST REPORT

संख्या/ No.: MACHINE-56/3095/2023  
माह/Month: October, 2023

**THIS TEST REPORT VALID UP TO : 31<sup>st</sup> October, 2028**



**CUB CADET, ST 100  
WHEELED BRUSH CUTTER**



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

**Northern Region Farm Machinery Training and Testing Institute**

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**11. FIELD TEST**

Field tests were conducted for 25.76 hours with Nylon rope attachment. Detailed results of field tests are shown in Annexure-I and summarized in the ensuing table.

Sr. No.	Parameters	Seasonal Grass cutting
		For Triangular blade
1.	Field condition	Leveled
2.	Intensity of grass	High
3.	Number of grass/weed in 1 sq. m	190 to 287
4.	Height of grass/weed, cm	18.0 to 26.0
5.	Diameter of grass/weed, mm	0.9 to 2.8
6.	Mass of grass cut (kg/h)	60.14 to 100.8
7.	Area covered (Rate of work), ha/h	0.025 to 0.034
8.	Time required for one hectare, h	29.41 to 38.46
9.	Fuel consumption	
	-l/h	0.86 to 0.97
	-l/ha	26.47 to 37.31

**11.1 Cutting using nylon rope****11.1.1 Rate of work**

- i) Area covered (rate of work) was observed as 0.025 to 0.034 ha/h.
- ii) Time required for one hectare was observed as 29.41 to 38.46 hours.
- iii) Numbers of perennial weed in one square meter was 190 to 287.
- iv) Mass of perennial weed cut was 60.14 to 100.8 kg/h.

**11.1.2 Fuel consumption**

Fuel consumption was observed as 0.86 to 0.97 l/h and 26.47 to 37.31 l/ha.

**12. ADJUSTMENT, DEFECTS, BREAKDOWNS & REPAIR**

No noticeable defect/breakdown was observed during test.

**13. COMPONENTS/ASSEMBLY INSPECTION AND ASSESSMENT OF WEAR****13.1 Engine:**

The engine and other assemblies were dismantled after 45.44 hours of engine operation.

**13.1.1 Cylinder:**

Cylinder bore dia. (mm)						Max. permissible wear limit
Top position		Middle position		Bottom position		
Thrust	Non-thrust	Thrust	Non-thrust	Thrust	Non-thrust	
70.02	70.02	70.03	70.02	70.03	70.02	70.165



13.2	Valves, guides and timing gear	Observation	
	Any marked sign of overheating of valves	:	None
	Pitting of seat/faces of valves	:	None
			<b>Spring stiffness (kgf/mm)</b>
	Inlet valve spring	:	0.30
	Exhaust valve spring	:	0.31
			<b>Discard limit (kgf/mm)</b>
			<b>Not specified</b>
13.3	Timing gears	:	No noticeable defect observed
13.4	Transmission	:	No noticeable defect observed
13.5	Rotary drive unit	:	No noticeable defect observed

#### 14. CRITICAL TECHNICAL SPECIFICATION

(The Critical Technical Specification is not available for towed wheel type brush cutter is the Ministry's communication No 13-9/2019 M & T (I&P) dated 26.04.2019)

#### 15. COMMENTS & RECOMMENDATIONS

##### 15.1 Mechanical vibration

The amplitude of mechanical vibration marked as (\*) on the relevant chapter, are on higher side. In view of above, this deserve to be given top priority for corrective action.

15.2 Labeling plate provided on the brush cutter does not contain the complete information of machine and manufacturer.

##### 15.3 Field performance

- i) No noticeable defect was observed during the field test.
- ii) The area covered was observed from 0.025 to 0.034 ha/hr.
- iii) Time required to cover one ha was from 29.41 to 38.46 h.
- iv) Fuel consumption was observed from 0.86 to 0.97 l/h and 26.47 to 37.31 l/ha.

15.4 The declared power of the engine is 2.9 kW but observed power is 2.13 kW only which is 26.55 % less.







**16. 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	 10.10.2023

**17. APPLICANT'S COMMENTS**

No specific comments received from the applicant.

