प्रारंभिक ब्याबसायिक परीक्षण रिपोर्ट

INITIAL COMMERCIAL TEST REPORT

संख्या/No. **CSIR/CMERI/FMTTC/2022/018**

माह/Month: **Dec. 2022**

THIS TEST REPORT VALID UP TO : 31ST December, 2029

AGRINEER- AMOL CHAFF CUTTER

कृषि मशीनरी प्रशिक्षण और परीक्षण केंद्र

Farm Machinery Training and Testing Centre

सीएसआईआर- केन्द्रीय यांत्रिक अभियांत्रिकी अनुसंधान संस्थान

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4. SPECIFICATIONS

4.1 General

Type of machine	:	Power Operated Chaff Cutter
Make	:	AGRINEER
Model	:	AMOL
Serial No.	:	AMOL202201
Name and address of manufacturer	:	Agrineer Agro Machinery Pvt. Ltd. 182, Vechale, Taluka/ District- Satara Pin - 415519, Maharashtra
Year of manufacture	:	2022
Country of origin	:	India

4.2 Construction details (Refer Fig.1)

4.2.1 Stand

Size of Platform, mm	:	1140 x 460 x 750
Height of Platform from GL, mm	:	750

4.2.2 Chaff cutter assembly

Power unit

Type and rating	:	2 hp Single Phase, 1440 rpm
Mass, kg	:	29
Method of mounting	:	Motor is fixed on the mounting frame with the help of nut and bolt.
Size of mounting base, mm	:	228 x 30 x 245

Main Power Transmission

Type	:	Belt and Pulley
Size of motor pulley, mm	:	78
Size of Flywheel Pulley, mm	:	760
Type & size of belt	:	'V' Belt, B102
Reduction ratio	:	1:140
Arrangement of belt tensioning	:	Provided

Flywheel

Number	:	01
Material	:	Mild Steel
Diameter of flywheel, mm	:	Ø 762 mm
Thickness of flywheel, mm	:	9.36
Size of 'S' shape for mounting blade, mm	:	700

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6.4.2 Summary of Performance Results

Sr. No.	Parameters	Observations	
		Dry fodder	Wet fodder
1	Feed rate (Kg/h)	160 to 190	280 to 310
2	Qty. of cut (Kg/h)	160 to 190	280 to 310
3	Quality of cut	-1.60 to -1.70	0.19 to 0.37
4	Avg. length of fodder pieces, (mm)	10.20 to 15.60	8.47 to 15.42
5	Power requirement (kW)	1.3 to 1.4	1.1 to 1.3
6	Qty. of cut per unit energy consumed (Kg/kWh)	122.56 to 150.00	212.00 to 233.44
7	Corrected quantity of cut (Kg/h)	223.99 to 245.00	282.83 to 302.09
8	Corrected quantity of cut (Kg/kWh)	560.00 to 1260.00	963.72 to 1025.80
9	Performance Index	-90.00 to -630.00	97.22 to 121.34

6.5. Labour requirement

One labour is required to operate the chaff cutter after bringing the complete material near to chaff cutter.

Ease of operation and adjustments

- The machine is easy to installation and operation.
- The cutter head & main power transmission are guarded by providing safety covers.

7. WEAR OF CRITICAL COMPONENTS: CUTTING BLADE

7.1 On mass Basis

Blade No	Initial wt. of blade (g)	Final wt. of blade after 25 h of test (g)	% Wear	% Wear Rate/hr
1	906	901.5	0.50	0.020
2	903	899	0.44	0.018

(The hourly rate of wear of blades on mass basis was recorded as 0.018 – 0.020 percent.)

8. DEFECTS, BREAKDOWNS & REPAIRS

No defects and breakdown were occurred during the entire test hours

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9. SUMMARY OF OBSERVATIONS, COMMENTS AND RECOMMENDATIONS

1. The chemical composition of blade partially meet the requirement as per IS : 1511-79 (RA 2012).
2. Blade Specification is not mentioned. It should be mentioned.
3. Cautionary notice as per IS 15542:2005 is not provided. It should be provided.
4. The quantity of cut for dry fodder and wet fodder was recorded as 160 to 190 kg per hour and 280 to 310 kg per hour respectively.
7. The hourly rate of wear of blades on mass basis was recorded as 0.018 to 0.020 percent. The hourly rate of wear of blades is considered normal.
8. Operator's manual is not provided. It should be provided.
9. Provision for changing angle of placement of trough is not provided. It should be provided.
10. The chute or conveyor shall be covered up to the minimum length specified as per IS:7897-1975. It should be maintained.
11. Adjustment of Length of cut for feed material is not provided. It should be provided.
12. A label is provided in Chaff Cutter, but Batch, Code, Recommended RPM, Rated input capacity is not mentioned. It should be mentioned.

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TESTING AUTHORITY

Report Prepared by	Sr. Technical Officer, CSIR-CMERI Farm Machinery Testing Centre	09/12/2022
Report Verified by	Scientist, CSIR-CMERI Farm Machinery Testing Centre	09/12/2022
Report Approved by	In-Charge, CSIR-CMERI Farm Machinery Testing Centre	09/12/2022
Report Approved for release by	Head, Business Innovation and Skill Group, CSIR-CMERI, Durgapur	

10. APPLICANT'S COMMENTS

Para No.	Our Reference	Applicant's Comments
10	9.1 – 9.12	We will take corrective action against the same.

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