

प्रारंभिक व्यावसायिक परीक्षण रिपोर्ट  
INITIAL COMMERCIAL TEST REPORT  
THIS TEST REPORT VALID UP TO

संख्या/No. CSIR/CMERI/FMTTC/2023/019  
माह/Month: August, 2023  
31<sup>st</sup> AUGUST, 2030



**BIRSA AGRO MACHINERY  
MANUAL PADDY THRESHER  
(MODEL – B.A.M. - 12)**



कृषि मशीनरी प्रशिक्षण और परीक्षण केंद्र  
**Farm Machinery Training and Testing Centre**  
सीएसआईआर- केन्द्रीय यांत्रिक अभियांत्रिकी अनुसंधान संस्थान  
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CSIR/CMERI/FMTTC/2023/019

**BIRSA AGRO MACHINERY  
MANUAL PADDY THRESHER, (B.A.M. – 12)  
(INITIAL COMMERCIAL TEST)**

<b>Name of Machine</b>	: Manual Paddy Thresher
<b>Type</b>	: Manual Operated Thresher
<b>Make</b>	: Birsa Agro Machinery
<b>Model</b>	: BAM - 12
<b>Name and address of Manufacturer</b>	: Birsa Agro Machinery, Dumka Road, Maheshpur, Pakur, Jharkhand - 816106
<b>Name and address of Applicant</b>	: Birsa Agro Machinery Dumka Road, Maheshpur, Pakur, Jharkhand - 816106
<b>Test Conducted at</b>	: <b>Farm Machinery Training and Testing Centre,</b> CSIR-Central Mechanical Engineering Research Institute, M.G. Avenue, Durgapur - 713209, West Bengal, Govt. of India

**THIS TEST REPORT VALID UP TO: 31<sup>ST</sup> August, 2030**  
[vide DAC&FW OM No. 13-24/2018- M&T (I&P) dated 19.09.2018]

Report No.: CSIR/CMERI/FMTTC/2023/019

Month: August

Year: 2023

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



**Farm Machinery Training and Testing Centre,**  
**CSIR-Central Mechanical Engineering Research Institute, Durgapur**  
**THIS REPORT IS VALID UPTO: 31<sup>ST</sup> AUGUST 2030**

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## 4. SPECIFICATION

## 4.1. General

Type of machine	:	Manual Paddy Thresher
Make	:	Birsa Agro Machinery
Model	:	BAM12
Serial No.	:	003
Name and Address of manufacturer	:	Birsa Agro Machinery,
Year of manufacture	:	2023
Country of origin	:	India

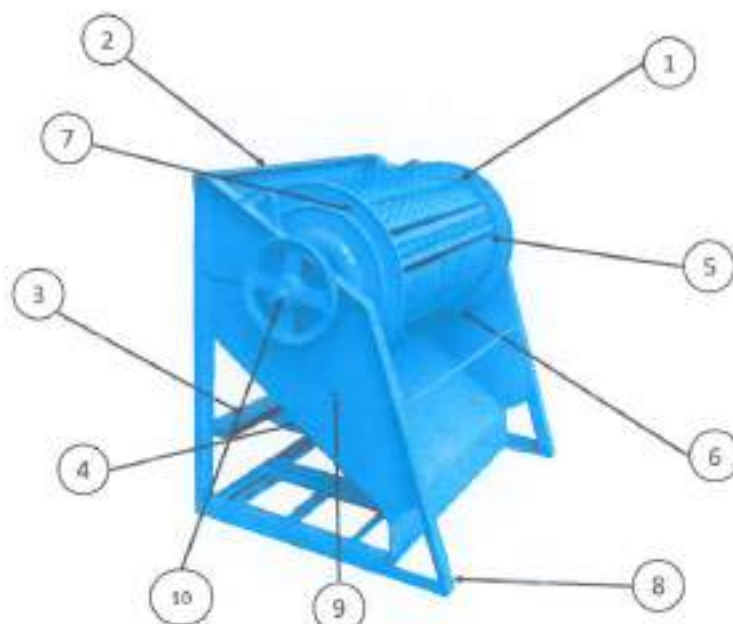


Fig. 1 Manual Paddy Thresher

## 4.2. Constructional details (Refer Fig. 1)

- |                       |                       |
|-----------------------|-----------------------|
| 1. Threshing Cylinder | 2. Front Grain Shield |
| 3. Pedal Board        | 4. Pedal Frame        |
| 5. Slat               | 6. Threshing Teeth    |
| 7. Cylinder End Disc  | 8. Base Frame         |
| 9. Side Board         | 10. Cylinder Axle     |



**4.3. Body Frame****4.3.1. Base**

Construction details	:	Mild Steel, Angle Size 30x30x3
Size of platform, (mm)	:	750x605x3

**4.3.2. Side Frames**

Material	:	Mild Steel
Size of angle section, (mm)	:	30x30x3

**4.3.3. Front Grain Shield**

Material	:	Mild Steel
Thickness	:	0.75
Method of fixing	:	It is welded with the main frame.

**4.3.4. Rear Grain Shield**

Type	:	N.A
Size of angle section, (mm)	:	N.A
Method of Fixing	:	N.A

**4.4. Cylinder****4.4.1. Slat**

Material	:	Wood
No. of Slats	:	12
Length, (mm)	:	550
Thickness, (mm)	:	15

**4.4.2. Cylinder End Discs**

Material	:	Mild steel
No. of discs	:	2
Thickness	:	0.75

**4.4.3. Threshing teeth**

Material	:	Mild steel
No. of teeth	:	156
Dia of teeth	:	3






Distance between the bottom ends of each teeth, (mm)	: 25.1
Threshing teeth projected out from the surface of the slats, (mm)	: 54.2
Distance between the tip of two adjacent teeth, (mm)	: 39.5
Method of Fixing	: Press fit

IS : 3327 - 1982

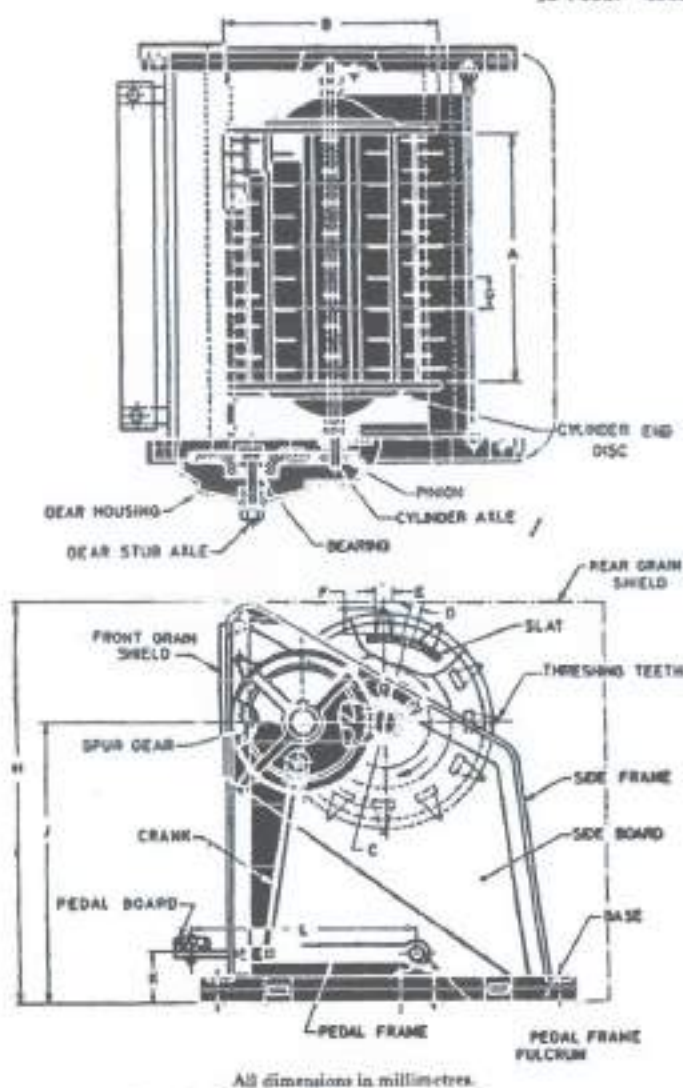


Fig. 2 Paddy Thresher, Pedal Operated

[Signature]



## 7. SUMMARY OF PERFORMANCE TEST

### 7.1. Summary of Performance Test

Speed of threshing cylinder, RPM	Feed rate, kg/h	Output, kg/h	Threshed grain, %	Unthreshed grain in output, %	Broken grain, %	Rubbish, %	Grain remaining on stalk, %	Threshing Efficiency, %
406	324.5	91.1	95.8	2.4	0.00	0.80	0.02	97.56
398	232.4	100.9	94.5	3.9	0.00	0.40	0.02	96.07
390	253.6	92.6	95.5	2.7	0.00	0.51	0.02	97.26
403	221.5	95.1	92.9	5.5	0.00	0.34	0.02	94.54
397	229.6	94.4	95.0	3.3	0.00	0.37	0.02	96.69
404	257.1	87.0	95.7	2.4	0.00	0.38	0.02	97.63
390	282.2	95.4	95.5	2.8	0.00	0.44	0.02	97.17

<b>7.1.1.</b>	<b>Rate of work</b>
i)	During tests, the feed rate of paddy crop varied from 221.5 to 324.5 kg/h,
ii)	The output of thresher varied from 87 to 100.9 kg/h, which is considered on lower side
<b>7.1.2.</b>	<b>Quality of work</b>
i)	During tests, un-threshed grain in main output was varied from 2.4 to 3.9% and the rubbish in main output was varied from 0.34 to 0.80%.
<b>7.2.</b>	<b>Labor requirement</b>
	In all, two skilled operators are needed to ensure continuous operation of machine for day long period.

## 8. EASE OF OPERATION & ADJUSTMENTS

No noticeable difficulty was observed during the operation and adjustments of paddy thresher.



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## 11. 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

However, these manuals need to be updated as per IS: 8132-1999.

## TESTING AUTHORITY

Report Prepared by	Technical Officer CSIR-CMERI Farm Machinery Testing Centre	
Report Verified by	Scientist, CSIR-CMERI Farm Machinery Testing Centre	
Report Approved by	In-Charge, CSIR-CMERI Farm Machinery Testing Centre	
Report Approved for release by	Head, Business Development Group, CSIR-CMERI, Durgapur	

## 12. APPLICANT'S COMMENTS

Para No.	Our Reference	Applicant's Comments
12	10.1 – 10.5	Noted, corrective actions will be taken against the given comments & Recommendations from 10.1 to 10.5



<b>Farm Machinery Training and Testing Centre, CSIR-Central Mechanical Engineering Research Institute, Durgapur</b> <b>THIS REPORT IS VALID UPTO: 31<sup>ST</sup> AUGUST 2030</b>	17 of 17
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