

प्रारंभिक व्यावसायिक परीक्षण रिपोर्ट  
INITIAL COMMERCIAL TEST REPORT

संख्या/No. CSIR/CMERI/FMTTC/2024/077  
माह/Month: December, 2024

THIS TEST REPORT VALID UP TO

:

30<sup>th</sup> NOVEMBER, 2031



**MODISH TRACTOR AURKISAN PVT. LTD.**  
**(MODEL: BALWAAN BW-25)**



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

## 4 SPECIFICATIONS

### 4.1 General

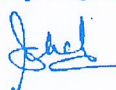
Type of machine	: Self-Propelled, Mini Tiller
Make	: Balwaan Krishi
Model	: BW-25
Serial No.	: Not Specified
Name and address of manufacturer	: Modish Tractor Aurkisan Pvt. Ltd. C-17, Purohit Ji Ka Bas, Road No – 1, MSME Office, 22 Godam Industrial Area, Jaipur – 302006.
Year of manufacture	: 2024
Country of origin	: India

### 4.2 Details of prime mover

Name and address of manufacturer*	: Modish Tractor Aur Kisan Pvt. Ltd. 17-C Sharma Colony Ext. 22 Godam, Jaipur, Rajasthan
Type	: Air Cooled, Single cylinder, Two Stroke, Spark Ignition engine
Make*	: BALWAAN KRISHI
Model*	: 1E48F
Country of origin*	: India
Year of manufacture*	: 2024
Engine speed (Manufacturer's recommended setting), (rpm)*	
High idle speed	: 7000 ±100
Low idle speed	: 3200±100
Rated speed, (rpm)*	: 6500±100
No load engine speed for field operation, (rpm)*	: 6500
Speed at maximum torque, rpm*	: 5500±100
Max Torque (Nm)*	: Not Specified
Rated Power (kW)*	: 2.2
Max Power (kW)*	: 2.4

\*As per specification sheet provided by applicant

**Report prepared by**



**Report verified by**



**5 FUEL & LUBRICANTS**

- 5.1 Fuel** : Unleaded Petrol
- 5.2 Lubricants (As mentioned)** : 2T oil (For 1 lit. of Petrol, 40 ml of 2T oil is to be mixed)

**6 ENGINE PERFORMANCE TEST**

The power weeder is provided with 2.4 Kw engine. In pursuance to Ministry's order No: 7 - 23/2012-M &T (I&P) dated 20.04.2011 the engine performance has not been conducted and the specifications / performance as specified by the applicant has been endorsed.

**6.1 Performance related parameter declared by the applicant**

The brush cutter is provided with 2.54 Kw engine. In pursuance to Ministry's order No: 7- 23/2011 - M &T (I&P) dated 20.04.2011, the engine performance has not been conducted and the specifications/ performance as specified by the applicant has been endorsed.

**6.2 Performance related parameter declared by the applicant**

Recommended high idle speed, rpm	:	7000
Recommended low idle speed, rpm	:	3200
Maximum power, Kw (Hp)	:	2.4
Rated Power, Kw (Hp)	:	2.2
Maximum equivalent crankshaft torque, N-m	:	1.9
Maximum temperature of Engine Oil (°C)	:	N.A

**6.3 Initial setting & Discard Limit declared by the applicant**

Sl No.	Critical Engine Components	Initial Setting	Discard Limit
1	Cylinder bore Dia. (mm)	48.0	48.15
2	Piston to cylinder clearance at skirt, mm	0.09	0.65
3	Piston dia.(mm)	47.91	47.41
4	Ring end gap (mm):		
	-Top compression ring	0.4	0.5
	-2 <sup>nd</sup> compression ring	0.4	0.5
	-3 <sup>rd</sup> compression ring	N.A.	N.A.
	-Oil ring	N.A.	N.A.
5	Ring groove clearance (mm):		
	-Top compression ring	0.05	0.1
	-2 <sup>nd</sup> compression ring	0.05	0.1
	-3 <sup>rd</sup> compression ring	N.A.	N.A.
	-Oil ring	N.A.	N.A.
6	Clearance of big end bearings (mm):		
	-Diametrical	0.2	0.25
	-Axial	0.2	0.25

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**10 RUNNING IN**

The Mini Tiller was run-in for one hour before field performance test as recommended by the applicant. All the fasteners were checked & tightened thereafter.

**11 FIELD TEST**

The field test under dry land condition was conducted for 18.10 h. The field performance tests were conducted at the rated 7500 rpm. Multiple test trials were conducted in sandy loam soil at the FMTTC, CSIR-CMERI farm, Durgapur. The results of the field test for dry land operation are summarized in Table – 5.

**Crop parameters**

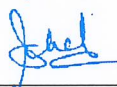
i)	Type of weed	:	Seasonal Grass
ii)	Height of weed, cm	:	9 to 22

**Table 5: Summary of field performance test**

Sl. No.	Parameter		Range
i	Type of soil	:	Sandy Loam
ii	Average Soil moisture (%)	:	14.3 to 18.2
iii	Average Bulk density of soil (g/cc)	:	1.25 to 1.71
iv	Average Speed of operation (kmph)	:	1.38 to 1.63
v	Average depth of cut (cm)	:	5.9 to 6.5
vi	Average Width of cut (m)	:	0.41 to 0.43
vii	Average Area covered (ha/h)	:	0.059 to 0.065
viii	Average Time required for one ha (Hr.)	:	15.4 to 17.0
ix	Average Fuel consumption		
		L/hr. :	1.1 to 1.3
		L/ha :	18.5 to 21.4
x	Average Weeding efficiency (%)	:	91.4 to 95.6
xi	Average Field efficiency (%)	:	78.8 to 93.3

The detailed field performance testing data is given in Annexure I.

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### 15 TECHNICAL LITERATURE

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

- a) User's manual book
- b) Service manual.

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

- a) Parts' catalogue

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

### TESTING AUTHORITY

Report Prepared by	Sr. Technical Officer, CSIR-CMERI Farm Machinery Testing Centre	<i>[Signature]</i> 23/12/2024
Report Verified & Approved by	In-Charge, CSIR-CMERI Farm Machinery Testing Centre	<i>[Signature]</i> 23/12/2024
Report Approved for release by	Head, Business Development Unit, CSIR-CMERI, Durgapur	<i>[Signature]</i> 26/12/24

### 16 APPLICANT'S COMMENTS

Para No.	Our Reference	Applicant's Comments
16	14.1 to 14.9	It's ok corrective action will be taken.

