

प्रारंभिक व्यावसायिक परीक्षण रिपोर्ट

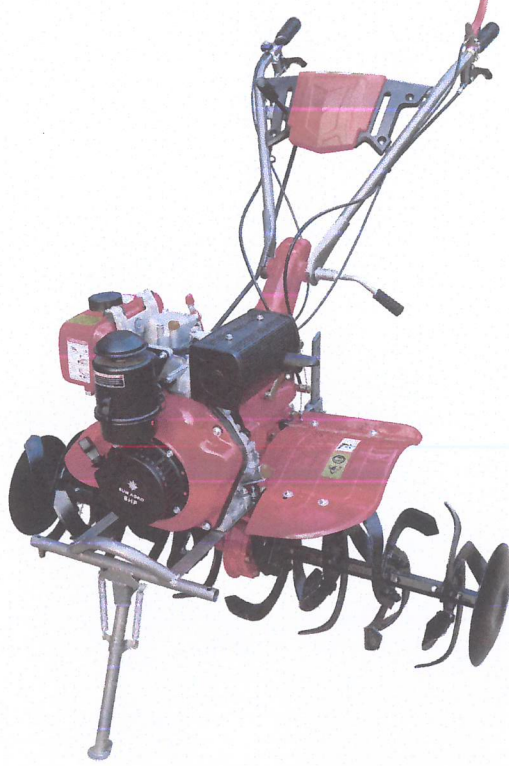
INITIAL COMMERCIAL TEST REPORT

THIS TEST REPORT VALID UP TO

संख्या/No. CSIR/CMERI/FMTTC/2024/042

माह/Month: August, 2024

: 31<sup>st</sup> JULY, 2031



**SUN AGRO  
POWER WEEDER (MODEL: SA 610D)**



कृषि मशीनरी प्रशिक्षण और परीक्षण केंद्र  
**Farm Machinery Training and Testing Centre**  
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### 3 METHOD OF SELECTION

The test sample was randomly selected by Video call. The applicant arranged SA 610D samples of power weeder with same specifications. The weeders with following serial number were considered for random selection.

Sample No	Weeder Serial Number
1	001
2	002
3	003
4	004 (Selected for Test)
5	005

**Table 1.** Samples for random selection

### 4 SPECIFICATIONS

#### 4.1 General

Type of machine	: Self-propelled , Walk-behind Type
Make	: SUN AGRO
Model	: SA 610D
Serial No.	: SA-22AD9E00022
Name and address of manufacturer	: SUN AGRO Adarsh Service Station, Supela, Bhilai, Chhattisgarh, Pin – 490020, GSTIN – 22BBIPA0665FIZ9
Year of manufacture	: 2024
Country of origin	: India

#### 4.2 Details of prime mover

Name and address of manufacturer	: SUN AGRO Adarsh Service Station, Supela, Bhilai, Chhattisgarh, Pin – 490020, GSTIN – 22BBIPA0665FIZ9
Type	: Single Cylinder, Air Cooled, 4 Stroke, Vertical Shaft, Compression Ignition Engine
Make	: KAMA
Model	: R173F
Sr. No.	: DC5230618A
Country of origin	: China
Year of manufacture	: 2024

Report verified by  
Subrata Kumar Mandal

Report prepared by  


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**Table 4: Chemical analysis of rotary blade**

Elements	Requirement as per IS: 6690-1981 (%)	As observed (%)	Remarks
Carbon	0.50 to 0.60	0.60	Conforms
Manganese	0.50 to 1.00	1.21	Conforms
Silicon	1.50 to 2.00	0.273	<b>Does not Confirm</b>
Phosphorous	0.05 (Max.)	0.035	Conforms
Sulphur	0.05 (Max.)	0.018	Conforms

## 11 RUNNING IN

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

## 12 FIELD TEST

The field test under dry land condition was conducted for 20.62 h. The field performance tests were conducted at the rated 3600 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 : 8 - 20

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

Sl. No.	Parameter	Range
I	Type of soil	Sandy Loam
ii	Average Soil moisture (%)	13.8 to 17.1
iii	Average Bulk density of soil (g/cc)	1.50 to 1.71
iv	Average Speed of operation (kmph)	1.46 to 2.12
v	Average depth of cut (cm)	9.2 to 9.9
vi	Average Width of cut (m)	1.12 to 1.13
vii	Average Area covered (ha/h)	0.14 to 0.20
viii	Average Time required for one ha (Hr.)	5.1 to 7.2
ix	Average Fuel consumption	
	L/hr.	0.9 to 1.9
	L/ha	5.0 to 12.3
x	Average Weeding efficiency (%)	91.4 to 98.7
xi	Average Field efficiency (%)	67.3 to 84.7

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

## 13 ADJUSTMENT, DEFECTS, BREAKDOWNS & REPAIRS

No noticeable breakdown occurred during test.

Report prepared by

*[Signature]*

Report verified by

*[Signature]*

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25.	Provision for cover on Exhaust	Must be provided	Provided	Conforms
26.	Direction of exhaust emission away from Operator	Must be provided	Provided	Conforms
27.	Marking/labeling machine	The labeling plate should be riveted on the body of machine having Name and address of manufacturer & Applicant, Country of origin, Make, Model, Year of manufacturer, Serial number, Engine number, Engine HP, rated rpm & SFC.	Provided	Conforms
28.	Literature	Operator manual, service manual and Parts catalogue should be provided.	Provided	Conforms

### 16 COMMENTS & RECOMMENDATION

- 16.1** The amplitude of mechanical vibrations indicated (\*) in section 7 is excessively high. This not only impacts the health, safety, and comfort of the operator but also negatively affects the lifespan of the components. Immediate corrective action is required to address this issue.
- 16.2** The chemical composition of the rotor blade does not conform to the requirements outlined in IS: 6690-1981. This issue should be thoroughly examined and rectified.
- 16.3** The material of the rotor shaft does not meet the requirements specified by BIS standards. This issue requires prompt investigation and correction.
- 16.4** The material used for the blade does not comply with the IS Standard. This issue requires immediate attention and corrective measures.
- 16.5** The Part's catalogue and service manuals have not been provided. It must be provided.

**Report prepared by**  


**Report verified by**  


### 17 TECHNICAL LITERATURE

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

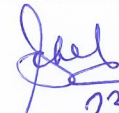
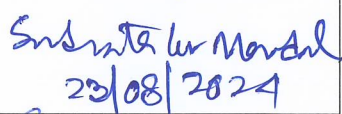
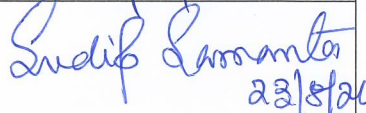
- a) User's manual book

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

- a) Parts' catalogue  
b) Service manual

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

### TESTING AUTHORITY

Report Prepared by	Sr. Technical Officer, CSIR-CMERI Farm Machinery Testing Centre	 23/08/2024
Report Verified & Approved by	In-Charge, CSIR-CMERI Farm Machinery Testing Centre	 23/08/2024
Report Approved for release by	Head, Business Development Unit, CSIR-CMERI, Durgapur	 23/8/24

### 18 APPLICANT'S COMMENTS

Para No.	Our Reference	Applicant's Comments
18	16.1 to 16.5	Noted, corrective actions will be taken against the given Comments & recommendations from 16.1 to 16.5

