

प्रारंभिक व्यावसायिक परीक्षण रिपोर्ट  
INITIAL COMMERCIAL TEST REPORT

संख्या/No. CSIR/CMERI/FMTTC/2024/049

माह/Month: September 2024

THIS TEST REPORT VALID UP TO

:

31<sup>st</sup> AUGUST, 2031



**SUN AGRO POST HOLE DIGGER  
(MODEL: SA-EA1)**



सत्यमेव जयते

Government Of India



कृषि मशीनरी प्रशिक्षण और परीक्षण केंद्र

**Farm Machinery Training and Testing Centre**

सीएसआईआर- केन्द्रीय यांत्रिक अभियांत्रिकी अनुसंधान संस्थान

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Type of Test : Initial Commercial Test  
 Period of Test : August 2024 – September 2024  
 Test Report No. : CSIR/CMERI/FMTTC/2024/049  
 Month and Year : September, 2024

- i. The results reported in this report are observed values and no corrections have been applied for atmospheric and site conditions.
- ii. The data given in this report pertains to the particular machine submitted by the applicant for test.
- iii. The results presented in this report do not in any way attribute to durability of the machine.
- iv. The report should not be reproduced in part or full without prior permission of the Director, CSIR- Central Mechanical Engineering Research Institute, M G Avenue, Durgapur -713209 (West Bengal)
- v. This test report is not covered under BIS certification. Therefore, the manufacturers cannot market the machine with ISI mark, only on the strength of this report.
- vi. This report cannot be used for legal purposes.

### SELECTED CONVERSIONS

#### 1. Force

$$1 \text{ kgf} = 9.80665 \text{ N}$$

$$= 2.20462 \text{ lbf}$$

#### 2. Power

$$1 \text{ HP} = 1.01387 \text{ Metric HP (Ps)}$$

$$= 745.7 \text{ W}$$

$$1 \text{ Ps} = 735.5 \text{ W}$$

#### 3. Pressure

$$1 \text{ psi} = 6.895 \text{ kPa}$$

$$1 \text{ kgf/sq.cm} = 98.067 \text{ kPa}$$

$$= 735.56 \text{ mm of Hg}$$

$$1 \text{ bar} = 100 \text{ kPa}$$

$$= 10 \text{ N/sq.cm.}$$

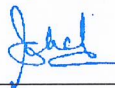
$$1 \text{ mm of Hg} = 1.3333 \text{ m-bar}$$

#### 4. Area

$$1 \text{ ha} = 10000\text{m}^2$$

$$= 2.471 \text{ Acres}$$

Report prepared by



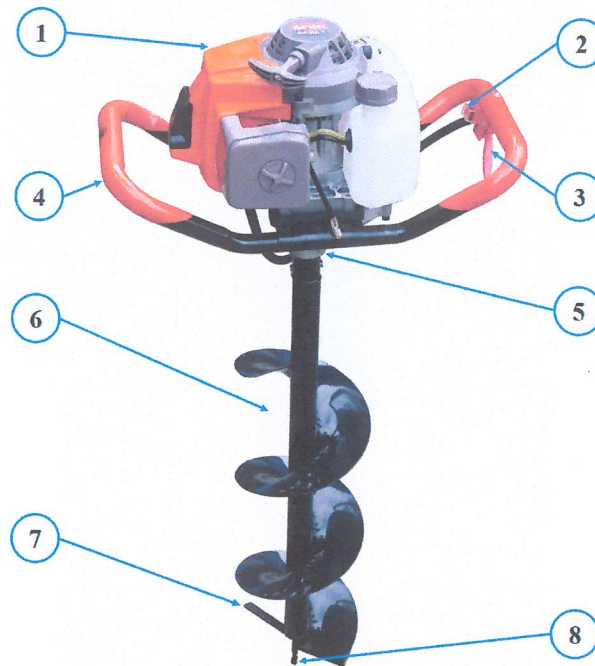
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## 5 SPECIFICATIONS

### 5.1 General

Name of machine	: Earth Auger/ Post Hole Digger
Type of machine	: Engine Powered
Name and address of manufacturer	: Sun Agro C/o Adarsh Service Station, G.E. Road Supela, Bhilai, Pin - 490023 Chhattisgarh
Name and address of applicant	: Sun Agro C/o Adarsh Service Station, G.E. Road Supela, Bhilai, Pin - 490023 Chhattisgarh
Make	: SUN AGRO
Model	: SA-EA1
Serial No.	: Not Specified
Brand's Name	: Sun Agro
Country of origin	: China
Year of manufacture	: 2024
Recommended use	: Digging Holes



*Fig.2 Schematic View of Post Hole Digger (SA – EA1)*

1. Engine	2. Engine Stop Switch
3. Throttle Lever	4. Handle
5. Gear Box	6. Auger
7. Auger Blade	8. Auger Bit

Report prepared by

*[Signature]*

Report verified by

*Subrata kr Mandal*

**12.4 Adequacy of power of prime mover**

The power of prime mover was found adequate

**12.5 Wear analysis of critical components**

Components	Duration of operation (h)	Initial mass (gm)	Mass after operation (gm)	Loss of mass (gm)	Percentage wear (%)	Percentage wear on hour basis (%)
Auger	12.44	3.05	2.6	0.45	14.8	1.2

**13 EASE OF OPERATOR, ADJUSTMENT AND SAFETY**

Fatigue was observed just 20 mins of operation of the machine, mainly, due to excessive mechanical vibration and noise. The operator complained about pain in different parts of body like wrist & shoulder etc. during operation.

Work-Rest cycle for this machine is observed on follows

20 minutes' work – 10 minutes' rest - 20 minutes' work – 10 minutes' rest - 20 minutes' work – 5 minutes' rest & so on

**14 ADJUSTMENT, DEFECTS, BREAKDOWNS & REPAIRS**

No noticeable breakdown occurred during 13.44 hours of operation.

**15 CRITICAL TECHNICAL SPECIFICATION**

Differed till 31.03.2021 Vide Ministry O.M No. 13-13/2020 M&T (I&P) dated 22.12.2020.

**16 COMMENTS & RECOMMENDATION**

- 16.1** The mechanical vibration marked as (\*) under section 7, are on higher side. It is not just directly concerned with operator's health, safety and comfort, but also adversely affects the useful life of the components. It needs to be corrected.
- 16.2** Chemical Composition of the Auger blade does not confirm with the requirement as per IS: 6025-1982. It should be looked into.
- 16.3** The User manual, Parts catalogue and service manual is not provided. It should be provided.
- 16.4** No labelling plate is riveted on the machine. A Labelling plate should be riveted on the machine with following information.
- |   |                      |
|---|----------------------|
| a. Name and address of the manufacturer | b. Country of origin |
| c. Make                                 | d. Model             |
| e. Year of manufacturer                 | f. Serial no         |
| g. Engine number                        | h. Engine HP         |
| i. Rated rpm                            |                      |

**Report prepared by**



**Report verified by**



