

व्यावसायिक परीक्षण रिपोर्ट
COMMERCIAL TEST REPORT

संख्या/ No.: Machine- 30/2665/2021
माह/Month : February , 2021

THIS TEST REPORT VALID UP TO : 28th February, 2026



**CENTURY, CEN-2 POST HOLE DIGGER
ENGINE POWERED**



भारत सरकार

Government of India

कृषि एवं किसान कल्याण मंत्रालय

Ministry of Agriculture and Farmers Welfare

कृषि, सहकारिता एवं किसान कल्याण विभाग

Department of Agriculture, Cooperation and Farmers Welfare

उत्तरी क्षेत्र कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

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11. HARDNESS AND CHEMICAL COMPOSITION OF AUGER BLADES**11.1 Hardness:****11.1.1 Hardness of Auger blade:**

Sr. No.	As per IS: 6025:1982 HRC	As observed (HRC)	Remarks
	48 to 58	58.55	No remarks is given because this is post hole digger- blade and not harvester blade.

11.2 Chemical composition analysis:**11.2.1 Auger blade:**

Constituents	As per IS: 6025:1982	Composition as observed (% of weight)	Remarks
Carbon (C)	0.70-0.95	0.3228	No remarks is given because this is post hole digger- blade and not harvester blade.
Manganese (Mn)	0.30 to 0.50	0.7602	
Silicon (Si)	--	0.4956	
Sulphur (S)	--	0.0297	
Phosphorous (P)	--	0.0000	

12. FIELD TEST

Field tests of Post hole digger was conducted for 29.19 hours with auger attachment. Detailed results of field tests are shown in Annexure-I summarized in the ensuing table. Details about the operator are show in Annexure-II.

Sr. No.	Parameters	Observation
1	Avg. Bulk density, g/cc	1.71 to 1.92
2	Avg. Soil moisture, %	8.0 to 11.8
3	Avg. Engine speed, rpm	- No load 7500
		- On load 7180 to 7200
4	Avg. Diameter of hole, mm	106
5	Avg. Depth of hole, cm	51
6	Avg. No of holes drilled per hour	188
7	Avg. Time required to drill one hole, sec	13.1
8	Avg. Fuel consumption	l/h 0.748
		l/hole 0.004

12.1 Rate of work

- Average diameter of hole was recorded as 106 mm.
- Average depth of hole was recorded as 51 cm.
- Average number of holes drilled per hour was recorded as 188.
- Average time required to drill one hole was recorded as 13.1 sec.

12.2 Fuel consumption

Average fuel consumption was observed as 0.748 l/h.

12.3 Labour requirement

To ensure the digging work without interruption, two operators are required to work alternates.

12.4 Adequacy of power of prime mover

The power of prime mover was found adequate.

12.5 Wear analysis of critical components on mass basis

Component	Duration of operation (h)	Initial mass (g)	Mass after operation (g)	Loss of mass (g)	Percentage wear	Percentage wear on hour basis
Auger	29.19	1600.2	1569.4	30.8	1.92	0.07

13. EASE OF OPERATION & ADJUSTMENTS

Fatigue was observed just after half an hour of operation of the Post hole digger, mainly, due to excessive mechanical vibration and noise. The operator complained about pain in different parts of his body like wrist & shoulder etc during operation.

Work-Rest cycle for this Post hole digger is observed on follows

30 minutes work – 10 minutes rest – 20 minutes work - 10 minutes rest – 20 minutes work - 15 minutes rest & so on.

14. DEFECTS, BREAKDOWNS AND REPAIRS

No noticeable breakdowns were occurred during 29.19 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 AND RECOMMENDATIONS

- 16.1** The amplitude of mechanical vibration marked as (*) on the relevant chapter, are on drastically 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. In view of above, this deserved to be given top priority for corrective action.
- 16.2** Symbols for operator controls and other displays are not provided. It **MUST** be provided
- 16.3** Labeling plate should be riveted on machine with following information.
1. Name and address of manufacturer
 2. Name and address of applicant
 3. Country of origin
 4. Make
 5. Model
 6. Year of manufacturer
 7. Serial number
 8. Engine number
 9. Engine HP
 10. Rated rpm
 11. SFC

17. TECHNICAL LITERATURE

Owner's manual is provided by the applicant during the test
The following literature, therefore, **MUST** be provided as per IS: 8132-1999 for guidance of users.

- i) Operator's manual
- ii) Service manual
- iii) Part's catalogue

TESTING AUTHORITY

SANJAY KUMAR AGRICULTURAL ENGINEER	
P. K. PANDEY DIRECTOR	

Draft test report compiled by, Deny Hasnu, Sr. Technician

18. APPLICANT'S COMMENTS

Para No.	Our Reference	Applicant's Comments
18.1	16.1	We will take necessary actions to reduce vibration
18.2	16.2	We will provide symbols for operator controls in future products
18.3	16.3	We will riveted the labeling plates in future product.
18.4	17	We will supply operator manual, service manual and part catalogue for farmers.

