

व्यावसायिक परीक्षण रिपोर्ट
COMMERCIAL TEST REPORT

संख्या/ No.: Comb-324/3037/2023
माह/Month: May, 2023

THIS TEST REPORT VALID UP TO : 31st May, 2030



**FIELDKING, FKMCH-88
SELF PROPELLED COMBINE HARVESTER (TRACK TYPE)**



भारत सरकार

Government of India

कृषि एवं किसान कल्याण मंत्रालय

Ministry of Agriculture and Farmers Welfare

कृषि एवं किसान कल्याण विभाग

Department of Agriculture and Farmers Welfare

उत्तरी क्षेत्र कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

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15. FIELD TEST

15.1 Combine harvester was operated in field for 26.88 and 27.16 (excluding run-in 2.00 & 2.08 h respectively) hours for wheat and paddy harvesting respectively. During the test, available varieties of crop were harvested to assess the field performance of combine with regard to quality of work, rate of work, fuel consumption, safety and soundness of construction etc. The crop and atmospheric conditions during field test are given in **Appendix - II & IV** respectively. The crop parameters recorded during the test for all crops are as given below: -

Crop Parameters

Sl. No.	Parameters		Observations	
			Wheat	Paddy
1.	Plant height, cm	:	79 to 98	98 to 107
2.	Number of tillers/m ²	:	270 to 352	590 to 624
3.	Length of ear head, cm	:	7 to 10	18 to 24
4.	Straw/grain ratio	:	0.8 to 1.5	0.9 to 1.1
5.	Moisture, %			
		- Grain :	8 to 13.2	17.7 to 18.1
		- Straw :	6.3 to 11	62.9 to 64.1

The results of field performance test of wheat and paddy crops harvesting are summarised in Table – 5 and presented in detail in **Appendix – II to V**.

Table- 5: SUMMARY OF LOSSES & EFFICIENCIES OBSERVED DURING FIELD PERFORMANCE TEST.

Crop variety	Collectable losses (%) (Max.)	Non-collectable losses (%) (Max.)	Total processing losses (%) (Max.)	Threshing efficiency (%) (Min.)	Cleaning efficiency (%) (Min.)	Grain breakage in main tank (%) (Max.)	Forward speed (kmph)	Area covered (ha/h)	Fuel consumption		Grain output (kg/h)	Crop throughput (t/h)
									(l/h)	(l/ha)		
WHEAT												
HD3086	1.80	0.6	1.9	99.2	97.8	1.03	1.94 to 2.00	0.313 to 0.328	9.95 to 10.73	30.29 to 32.92	1715 to 1853	3.32 to 4.26
PADDY												
Samba	1.4	0.30	1.7	99.3	96.3	0.87	1.96 to 2.20	0.281 to 0.337	8.68 to 9.68	25.75 to 33.41	4253 to 5336	8.51 to 10.14

15.2 Unloading of grains

The time to unload the grain tank ranged from 89 to 95 second in paddy operation & 120 to 134 seconds in wheat operation.

15.3 Time required for daily maintenance

The average labour required for daily maintenance was approximately two-man hours.

15.4 Harvesting of any other crop

Not done, as not recommended



20.2 Acceptance criteria in case of Breakdowns/Defects as per clause 4.2 of IS:15806-2018**XVII. Break down (critical, major & minor)**

Sr. No.	Category of breakdowns	Category (Evaluative/ Non evaluative)	Requirements as per OM	As observed	Whether meets the requirements (Yes/No)
1.	Critical	Evaluative	No critical breakdown	None	Yes
2.	Major	Evaluative	Not more than two and neither of them should be repetitive in nature	None	Yes
3.	Minor	Evaluative	Not more than five and frequency of each should not be more than two	None	Yes
4.	Total breakdown	Evaluative	In no case total no of (major + minor) breakdowns exceed five	None	Yes

20. COMMENTS AND RECOMMENDATIONS**20.1 Mechanical vibration**

The amplitude of mechanical vibration of components marked as (*) in chapter 14 of this test report are observed on higher side. This calls for providing suitable remedial measures to dampen the vibration in order to improve the operational comfort and service life of various components & sub-assemblies.

20.2 Field performance test

No noticeable defect and breakdown observed during operation of combine harvester.

20.3 Ease of operation and safety provisions

No noticeable difficulties were observed during operation of combine harvester.

20.4 Hardness and chemical composition

Hardness & chemical composition of knife blade and knife guard are not within the limit specified in relevant standards. It should be looked into for corrective action at regular production level.

20.5 The specification of knife section, knife guard and knife back does not conform to IS: 6025-1982, IS:6024-1983 and IS: 10378-1982.**20.6 The maximum power in two hour test was observed as 61.0 kW against of 63.0 kW for full throttle setting under natural ambient condition.****20.7 The noise produced by the machine at by-stander's position and at operator's ear level was observed 87.8 and 97.2 dB(A) respectively. The noise level at both positions is nearer to max. permissible limit. It may be looked into.**

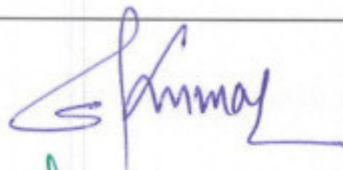

20.7 Literature supplied with the machine.

The following literatures were provided by the applicant during the test.

- i) Operators manual & Service manual
- ii) Spare parts catalogue

However, the operator manual needs to be updated as per IS: 8132-1999

TESTING AUTHORITY

Er. SANJAY KUMAR AGRICULTURAL ENGINEER	
Dr. MUKESH JAIN DIRECTOR	 31.05.2023

21. APPLICANT'S COMMENTS

We will improve all parameters in the future production according to the relevant standards.

