

ब्यावसायिक परीक्षण रिपोर्ट
COMMERCIAL TEST REPORT

संख्या / No.: Comb-326/3041/2023
माह / Month: June, 2023

THIS TEST REPORT VALID UP TO : 30th June, 2030



**MALKIT-897 KOMPACT
SELF PROPELLED COMBINE HARVESTER**



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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14. FIELD TEST

14.1 Combine harvester was operated in field for 25.70 and 27.22 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 under:-

Crop Parameters

Sr. no.	Parameters		Observations	
			Wheat	Paddy
1.	Plant height, cm	:	106 to 121	92 to 125
2.	Number of tillers/m ²	:	260 to 410	147 to 230
3.	Length of ear head, cm	:	9 to 13	18 to 26
4.	Straw/grain ratio	:	1.0 to 1.3	1.3 to 1.7
5.	Moisture, %			
	- Grain	:	10.5 to 11.5	13.5 to 14.1
	- Straw	:	7.5 to 7.9	67.0 to 68.2

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	Collectible losses (%)	Non-collectible losses (%)	Total processing losses (%)	Threshing efficiency (%)	Cleaning efficiency (%)	Grain breakage in main grain tank (Max.) (%)	Forward speed	Area covered	Fuel consumption		Grain out put	Crop through-put
	(Max.)	(Max.)	(Max.)	(Min.)	(Min.)	(%)	(kmph)	(ha/h)	(l/h)	(l/ha)	(kg/h)	
1	2	3	4	5	6	7	8	9	10	11	12	13
WHEAT												
DBW-222	1.3	0.30	1.50	99.3	98.0	0.63	1.64 to 2.08	0.338 to 0.403	5.94 to 6.44	15.19 to 19.06	3446 to 4259	7.09 to 9.52
PADDY												
IR-64	1.93	0.23	2.01	99.2	97.3	1.17	1.50 to 1.66	0.301 to 0.333	6.44 to 6.99	20.52 to 24.55	1393 to 2397	3.70 to 5.94

15. DEFECTS, ADJUSTMENTS, BREAKDOWNS AND REPAIRS

No defects and breakdown was observed during the test.



19. COMMENTS AND RECOMMENDATIONS

19.1 **Mechanical vibration**

The amplitude of mechanical vibration of components marked as (*) in chapter 13 of this 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.

19.2 **Field performance test**

No noticeable defect observed during field test.

19.3 The maximum power in two-hour test was observed as 55.5 kW against the declaration of 54.4 kW for full throttle setting under natural ambient condition.

19.4 The specific fuel consumption corresponding to maximum power at full throttle setting was observed as 0.268 kg/kwh.

19.5 The back-up torque of the engine was observed as 32.81% under natural ambient test condition.

19.6 The maximum smoke density was observed as 0.13 (Bosch no.) which is within permissible limit.

19.7 The maximum temperature of engine oil, coolant (water) and exhaust gas were observed as 107.7, 96 and 533 °C respectively.

19.8 Lubricating oil consumption of 0.12 g/kWh was observed during five hours rating test.

19.9 The noise produced by the machine at by-stander's position and at operator's ear level (inside cabin) was measured as 85.0 & 96.4 dB(A) respectively. The noise level at operator's ear level is nearer to max. permissible limit. It may be looked into.

19.10 **Hardness and chemical composition**

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

19.11 Safety against the accidental start of engine is not provided on combine harvester. It **MUST** be provided.

19.12 Individual brake pedals for LHS & RHS brake is not provided. It may be provided.



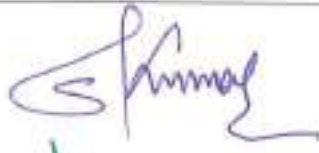

19.13 Literature supplied with the machine

The following literature were provided by the applicant

- i) Operator's manual of Combine Harvester
- ii) Service manual of Combine Harvester
- iii) Parts catalogue of Combine Harvester
- iv) Operator manual for engine

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

TESTING AUTHORITY

Er. SANJAY KUMAR AGRICULTURAL ENGINEER	
Dr. MUKESH JAIN DIRECTOR	 07.06.2023

Test report is compiled by Sh. Vikram, (Sr. Tech.)

20. APPLICANT'S COMMENTS

We will take care of all these next production level.

