

व्यावसायिक परीक्षण रिपोर्ट
COMMERCIAL TEST REPORT

संख्या/ No.: COMB – 308/2997/2023
माह/Month: April, 2023

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



**ACE, ACE NG,
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

Northern Region Farm Machinery Training and Testing Institute

ट्रैक्टर नगर सिरसा रोड हिसार (हरियाणा) - 125 001

Tractor Nagar, Sirsa Road, HISAR (Haryana)-125 001

[ISO 9001:2015 CERTIFIED]

Website: <http://nrfmtti.gov.in/>

E-mail: fmti-nr@nic.in

Tele./FAX: 01662-276984

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15. FIELD TEST

15.1 The combine harvester was operated in field for 55.83 hours (excluding run-in 3.00 h) for paddy harvesting. 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**

The crop parameters recorded during the test for paddy crops is as under:-

Crop Parameters

Sr. No.	Parameters		Observations
			Paddy
1.	Plant height, cm	:	94 to 119
2.	Number of tillers/m ²	:	198 to 285
3.	Length of ear head, cm	:	19 to 30
4.	Straw/grain ratio	:	1.9 to 3.7
5.	Moisture, %:		
		- Grain	11.5 to 12.0
		- Straw	58.4 to 60.3

The summary of losses and efficiencies observed during field performance test with paddy crop is summarised in Table 4 and presented in detail in **Appendix - III**

TABLE-4: SUMMARY OF LOSSES & EFFICIENCIES OBSERVED IN FIELD PERFORMANCE TEST

Crop variety	Collectable losses (%)	Non-collectable losses (%)	Total processing losses (%)	Threshing efficiency (%)	Cleaning efficiency (%)	Grain breakage in main grain outlet (%)	Forward speed	Area covered	Fuel consumption		Grain output	Crop throughput
	(Max.)	(Max.)	(Max.)	(Min.)	(Min.)	(%)	(kmph)	(ha/h)	(l/h)	(l/ha)	(kg/h)	(t/h)
	Paddy											
MTU-1010	1.70	2.08	1.95	98.6	97.1	0.30	2.33 to 3.13	0.321 to 0.370	7.22 to 9.20	20.51 to 28.26	1424 to 3158	6.65 to 9.43

15.2 Unloading of grains

The time to unload the grain tank ranged from 86 to 96 seconds in paddy 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.

16. DEFECTS, ADJUSTMENTS, BREAKDOWNS AND REPAIRS

No noticeable defect or breakdown was observed during the test.



ii)	Knife blade as per IS :6025 - 1982	Non evaluative	It must have Chemical composition as C=0.70-0.95 % Mn= 0.30-0.50% (R)	-	C= 0.66 % Mn= 0.58 %	Does not conform Does not conform
iii)	Knife back should meet the requirement of IS:10378-1982	Non evaluative	The knife back shall be manufactured from Carbon Steel having minimum carbon content of 0.35 % (R)	--	C=0.20%	Does not conform

19.2 Acceptance criteria in case of Breakdowns/Defects as per clause 4.2 of IS:15806-2018**X. 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 13 of this test report are observed to be 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

- (i) No noticeable defects and brake down observed during the test.

20.3 Ease of operation and safety provisions

- (i) No noticeable difficulties observed during operation of combine harvester.

20.4 Hardness and chemical composition

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

20.5 The stone strap is provided at bottom of centre of undershot conveyor. It is welded and there is no provision for easy opening and cleaning it. It should be looked into for improvement.



20.6 Literature supplied with the machine.

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

- i) Operators Manual
- ii) Spare parts catalogue

However, applicant should produce service manual and update operators manual as per IS: 8132-1999.

TESTING AUTHORITY

SANJAY KUMAR AGRICULTURAL ENGINEER	
Dr. MUKESH JAIN DIRECTOR	 17.04.2023

Test report is compiled by: Vikram, Senior Technician

21. APPLICANT'S COMMENTS

Para no.	Our reference	Applicant's comments
21.1	20.1, 20.4 & 20.5	We will look into for corrective action.
21.2	20.6	Literature for this combine harvester model will be updated in respective manuals.

