

व्यावसायिक परीक्षण रिपोर्ट  
COMMERCIAL TEST REPORT

संख्या/ No.: COMB - 314/3012/2023  
माह/Month: April, 2023

**THIS TEST REPORT VALID UP TO : 30<sup>th</sup> April, 2030**



**VIKRANT, BTC060  
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**

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**15. FIELD TEST**

**15.1** The combine harvester was operated in field for 50.50 hours (excluding run-in 1.38 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	:	86 to 120
2.	Number of tillers/m <sup>2</sup>	:	173 to 324
3.	Length of ear head, cm	:	17 to 27
4.	Straw/grain ratio	:	2.5 to 3.7
5.	Moisture, %:		
		- Grain :	13.6 to 17.2
		- Straw :	63.9 to 70.4

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 (%) (Max.)	Non-collectable losses (%) (Max.)	Total processing losses (%) (Max.)	Threshing efficiency (%) (Min.)	Cleaning efficiency (%) (Min.)	Grain breakage in main grain outlet (%)	Forward speed (kmph)	Area covered (ha/h)	Fuel consumption:		Grain output (kg/h)	Crop throughput (t/h)
									(l/h)	(l/ha)		
Paddy												
MTU-1010	1.97	1.17	2.74	98.3	97.1	0.30	2.32 to 2.74	0.305 to 0.356	7.29 to 8.52	22.76 to 25.42	1510 to 1934	6.29 to 7.66
Rajender Sweta	0.74	0.39	0.91	99.4	98.4	0.17	2.29 to 2.35	0.306 to 0.317	7.55 to 7.82	24.70	1436 to 1925	5.96 to 6.69

**15.2 Unloading of grains**

The time to unload the grain tank ranged from 88 to 118 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.



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= 0.58  Mn= 0.56	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=0.18	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**

No noticeable defects and brake down observed during the test.

**20.3 Ease of operation and safety provisions****Ease of operation and safety provision**

i) Safety against the accidental start of engine is not provided on combine harvester.

It **MUST** be provided.

ii) No noticeable difficulties observed during operation of combine harvester.

iii) Slip clutch at grain and taling elevator drive are not provided.

It should be provided as per the requirement of IS:15806-2018

**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.**


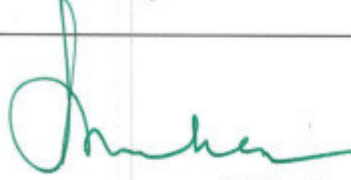
The following literatures are provided by the applicant during the test.

i) Operators Manual

ii) Spare parts catalogue

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

**TESTING AUTHORITY**

SANJAY KUMAR AGRICULTURAL ENGINEER	
Dr. MUKESH JAIN DIRECTOR	 25.04.2023

Test report is compiled by C. Veeranjanyulu, Senior Technician

**21. APPLICANT'S COMMENTS**

No specific comments received from the applicant

