व्यावसायिक परीक्षण रिपोर्ट संख्या/ **No.: COMB- 317/3017/2023**

COMMERCIAL TEST REPORT (VARIANT) माह/**Month: May, 2023**

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

NEW HOLLAND, TC 5.30 C4
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

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

11. FIELD PERFORMANCE TEST

1.1 Combine harvester was operated in field for 25.66 (excluding run-in hour of 2.11) 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 & IV** respectively.
The crop parameters recorded during the test for all crops are as under: -

Crop parameters

Sr. no.	Parameters		Observations
			Paddy
1.	Average plant height, cm	:	52 to 140
2.	Average number of tillers/m^2	:	282 to 335
3.	Average length of ear head, cm	:	15 to 18
4.	Average straw/grain ratio	:	1.28 to 1.97
5.	Average moisture, %		
	- Grain	:	14.5 to 15.0
	- Straw	:	45.0 to 51.2

The results of field performance test of Wheat and Paddy crops harvesting are summarised in below Table and presented in detail in **Appendix – II to V.**

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 grain tank (Max.), (%)	Forward speed, (kmph)	Area covered, (ha/h)	Fuel consumption		Grain out put (kg/h)	Crop through-put (t/h)
									(l/h)	(l/ha)		
1	2	3	4	5	6	7	8	9	10	11	12	13
PADDY												
ATD39	0.98	0.40	1.21	99.0	97.8	0.33	2.57 to 2.60	0.790 to 0.906	10.37 to 11.28	11.87 to 13.32	5169 to 6433	13.78 to 17.01

11.2 Unloading of Grains:

The unloading time to unload the Grain tank is ranged from 65 to 98 seconds

11.3 Time required for daily maintenance:

During test period the servicing and maintenance were done as per the recommendation of manufacturer. The average labour required for daily maintenance was approximately two-man hours.

x	Labelling of control gauge	Evaluative	Essential	--	Provided	Provided	Conforms

XI. 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

16. COMMENTS AND RECOMMENDATIONS

16.1 Mechanical vibration

The amplitude of mechanical vibration of components marked as (*) in **chapter 8** 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.

16.2 Field performance test

No noticeable defect was observed during field test.

16.3 The maximum power in two hour test was observed as 89.8 kW against the declaration of 91.4 kW for full throttle setting under natural ambient condition.

16.4 The specific fuel consumption corresponding to maximum power at full throttle setting recommended for field operation was observed as 0.225 kg/kwh

16.5 The back-up torque of the engine was observed as 10.93 % under natural ambient test condition.

16.6 The maximum smoke density was observed as 1.75 (Bosch No.) which is within permissible limit.

16.7 The maximum temperature of engine oil, coolant (water) and exhaust gas were observed as 103.3, 101.3 and 539.60 °C, respectively.

16.8 Lubricating oil consumption of 0.272 g/kWh was observed during five hours rating test

16.9 The noise produced by the machine at by-stander's position and at operator's ear level (inside cabin) was measured as 85 & 83.7 dB(A) respectively. The noise level at bystander's position is nearer to max. permissible limit. It may be looked into.

16.10 Diesel exhaust fluid (DEF) consumption was observed as 0.908 l/h.

16.11 Technical literature

The following literatures were provided by the applicant during the test as per IS: 8132-1999.

i) The operator manual

ii) Spare part catalogue

iii) Service manual

TESTING AUTHORITY

Er. SANJAY KUMAR AGRICULTURAL ENGINEERING	
Dr. MUKESH JAIN **DIRECTOR**	03.05.2023

Test report is compiled by: Er. V. S. Shinde, S.T.A.

17. APPLICANT'S COMMENTS

We will look into for minimizing the Vibration level on recommended components.