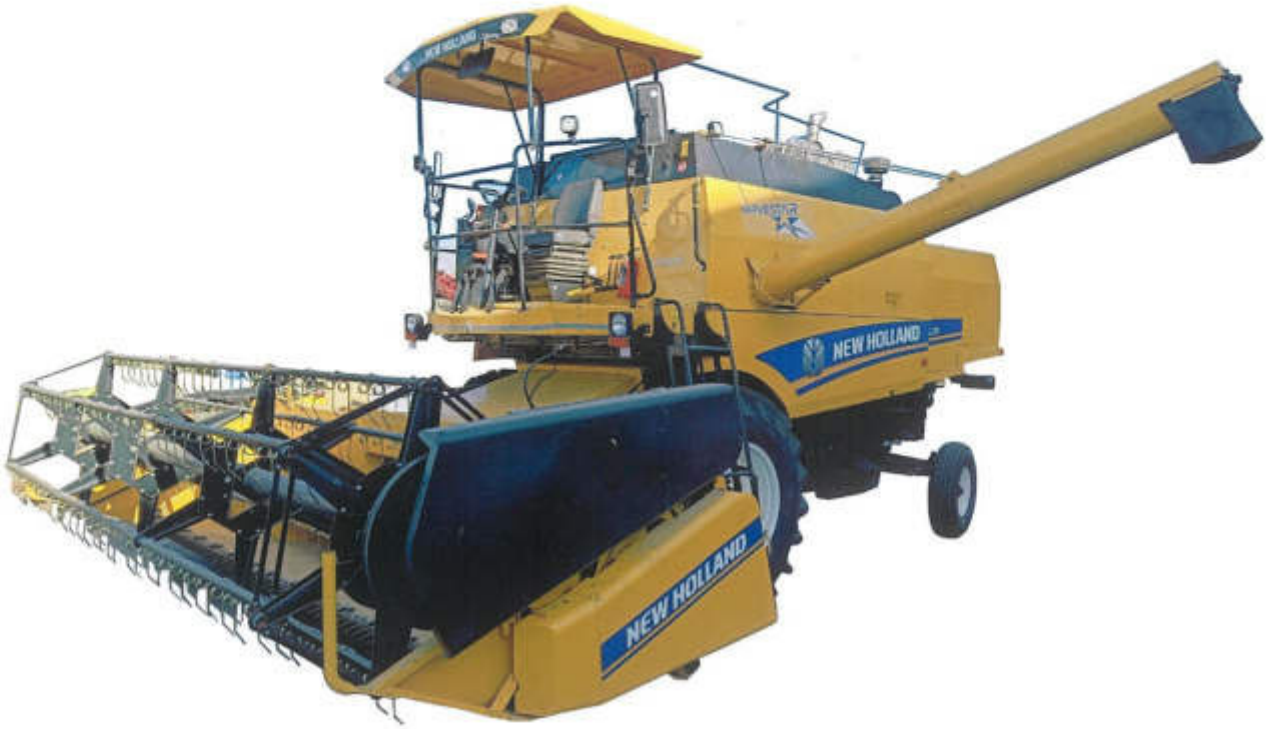
व्यावसायिक परीक्षण रिपोर्ट

COMMERCIAL TEST REPORT (VARIANT)

संख्या/ **No.: COMB- 318/3023/2023**

माह/**Month: May, 2023**

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



NEW HOLLAND, TC 5.30 S4
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

11.1 Combine harvester was operated in field for 26.63 (excluding run-in hour of 2.80) 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	:	53 to 105
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	:	0.71 to 1.14
5.	Average moisture, %		
	- Grain	:	14.5 to 15.0
	- Straw	:	45.0 to 49.3

The results of field performance test of Paddy crop 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	1.71	0.19	1.82	98.29	98.09	0.54	2.25 to 2.54	0.850 to 1.019	9.93 to 11.46	10.82 to 13.48	7232 to 8728	12.84 to 18.40

11.2 **Unloading of Grains:**

The unloading time to unload the Grain tank is ranged from 64 to 94 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.

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 ^{0} 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 85.3 & 87.1 dB(A) respectively. The noise level at operator's ear level is nearer to max. permissible limit. It may be looked into.

16.10 Diesel exhaust fluid (DEF) consumption was observed as 0.920 l/h.

16.11 Technical Literature:

The following literature was provided by applicant during the test, however the same needs to be updated as per IS:8132-1999

i) Operator manual
ii) Spare parts catalogue
iii) Service manual.

TESTING AUTHORITY

Er. SANJAY KUMAR **AGRICULTURAL ENGINEERING**	
Dr. MUKESH JAIN **DIRECTOR**	16.05.2023

Test report is compiled by: Er. V. S. Shinde, Senior Technical Assistant.

17. APPLICANT'S COMMENTS

Sr. No.	Our reference	Applicant comments
17.1	16.1	We will look into for minimizing the vibration level on recommended components.