

व्यावसायिक परीक्षण रिपोर्ट
COMMERCIAL TEST REPORT

संख्या/ No.: COMP-192/2595/2020
माह/Month : November, 2020

THIS TEST REPORT VALID UP TO : 30th NOVEMBER, 2027



**GRD SUPER SMS, FITTED ON MALKIT 997,
SELF- PROPELLED COMBINE HARVESTER**



भारत सरकार

Government of India

कृषि एवं किसान कल्याण मंत्रालय

Ministry of Agriculture and Farmers Welfare

कृषि, सहकारिता एवं किसान कल्याण विभाग

Department of Agriculture, Cooperation and Farmers Welfare

उत्तरी क्षेत्र कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

Northern Region Farm Machinery Training and Testing Institute

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4. ROTOR BALANCING TEST

Date of test	:	13.11.2020
Make and model of Rotor balancing machine	:	PROTEQ and H - 1 K
Mass of the job (kg)	:	80.42
Service speed of the job rpm	:	1890
ISO balancing grade	:	G 16
Balancing speed rpm	:	1890

S.No.	Particulars	As permissible	As observed	Remark
	Unbalance weight(Left side plane) (g)	38.71	7.46	Balanced
	Unbalance weight (Right side plane) (g)	38.71	25.35	Balanced

Unbalance angle (Left side plane) (degree)	271.77
Unbalance angle (Right side plane) (degree)	318.94

5. FIELD TEST

- 5.1 The SMS fitted on Malkit-997 Brisk combine harvester was operation in the paddy field for 6 hrs, to assess (a) performance of SMS and, (b) performance of combine harvester with SMS.

The crop parameters recorded during the test were as under:-

Crop Parameters

Sl. No.	Parameters	Observations
1.	Average plant height, cm	87 to 91
2.	Average number of tillers/m ²	252 to 285
3.	Average length of ear head, cm	22 to 25
4.	Average straw/grain ratio	1.6
5.	Average moisture, %	
	- Grain	13.3
	- Straw	68.7

The results of field performance test of Paddy crop 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	Collectable losses (%)	Non-collectable losses (%)	Total processing losses (%)	Threshing efficiency (%)	Cleaning efficiency (%)	Grain breakage in main grain tank (%)	Forward speed (kmph)	Area covered (ha/h)	Fuel consumption		Grain output (kg/h)	Crop throughput (t/h)
									(l/h)	(l/ha)		
1	2	3	4	5	6	7	8	9	10	11	12	13
PADDY												
PR-27 P31	1.8	0.3	2.0	98.9	96.7	0.75	1.60	0.402	10.30	25.63	3344.87	8.83

SUMMARY OF FIELD PERFORMANCE OF SMS

Uniformity of straw spread, CV, (percent)	17.5
Weighted mean size of chopped straw, cm	12.8

6. DEFECTS, ADJUSTMENTS, BREAKDOWNS AND REPAIRS

No noticeable defect observed

7. SUMMARY OF OBSERVATIONS**7.1 Field test**

7.1.1 Performance of SMS with Malkit 997 Combine Harvester		
1	Uniformity of straw spread, CV, (percent)	17.5
2	Weighted mean size of chopped straw, cm	12.8

7.1.2 Performance of Malkit 997 Combine harvester with GRD Super SMS

S. No	Parameters	Observations
1.	Range of average speed of operation (kmph)	1.60
2.	Range of average area covered (ha/h)	0.402
3.	Maximum average fuel consumption:	
	- (l/h)	10.30
	- (l/ha)	25.63
4.	Crop throughput (tonne/h)	8.83
5.	Grain breakage in main grain outlet (%)	0.75
6.	Header losses (%)	0.16
7.	Total non-collectable losses (%)	0.3
8.	Total collectable losses (%) (un threshed + broken from main outlet)	1.8
9.	Total processing losses (%)	2.0
10.	Threshing efficiency (%)	98.9
11.	Cleaning efficiency (%)	96.7

9. CRITICAL TECHNICAL SPECIFICATIONS

Deferred till 31.12.2020 vide Ministry O.M. No 13-13/2020 M&T, (I&P) dated 24.04.2020

10. COMMENTS AND RECOMMENDATIONS**10.1 Field performance test**

No noticeable defect observed during field test.

10.2 Applicant has recommended Malkit-997 combine harvester for SMS field testing. This is vital information and therefore the same must be inscribed in labelling plate also for the guidance of users.

10.3 Ease of operation and safety provision

No noticeable difficulties observed during field test.

10.4 The labelling plate **MUST** be riveted on the machine with following information.

- 1) Name and address of manufacture.
- 2) Country of origin
- 3) Make
- 4) Model
- 5) Year of manufacture
- 6) Serial Number
- 7) Type
- 8) Size
- 9) Required size of prime mover (kW)
- 10) Weight of the machine (kgs)
- 11) Make and Model of Combine Harvester


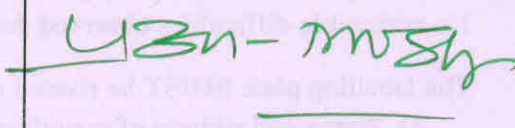
10.5 Literature supplied with the machine

No technical literature provided by the applicant during the test.

The following literature therefore, **MUST** be provided as per IS:8132-1999 for guidance of users

- I) Operator Manual
- II) Service Manual
- III) Part's Catalogue

TESTING AUTHORITY

SANJAY KUMAR AGRICULTURAL ENGINEER	
P. K. PANDEY DIRECTOR	

Draft test report compiled by C. Veeranjanyulu, Senior Technician

11. APPLICANT'S COMMENTS

No comments received from the applicant.

