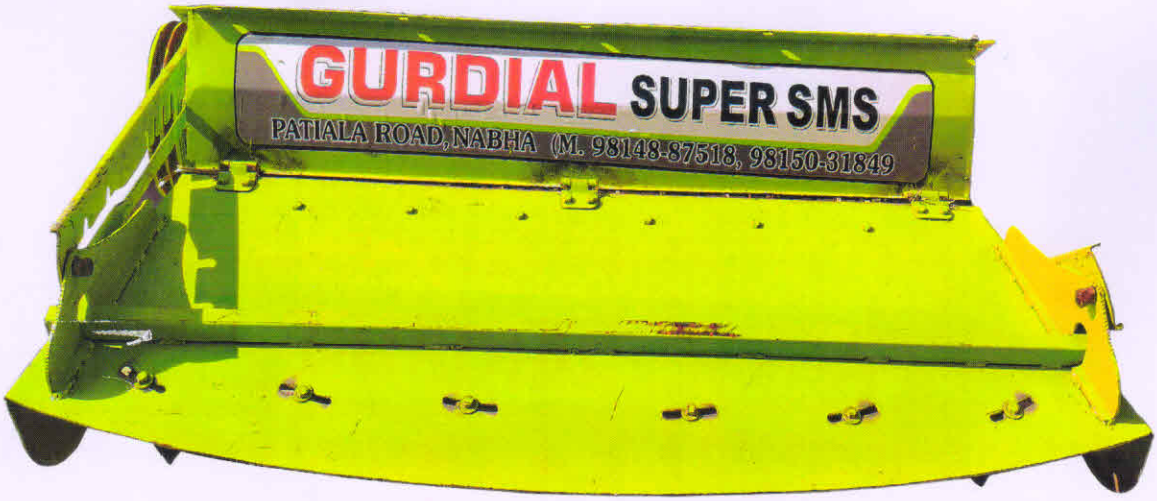
व्यावसायिक परीक्षण रिपोर्ट
COMMERCIAL TEST REPORT

संख्या/ **No.: COMP-196/2599/2020**
माह/**Month : November, 2020**

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



GURDIAL SUPER SMS, FITTED ON AS- SHAKTIMAN-930, 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
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4. ROTOR BALANCNING TEST

	Date of test	:	18.11.2020
	Make and model of Rotor balancing machine	:	PROTEQ and H - 1 K
	Mass of the job (kg)	:	83.36
	Service speed of the job rpm	:	1775
	ISO balancing grade	:	G 16
	Balancing speed rpm	:	1775

S.No.	**Particulars**	As permissible	As observed	Remark
	Unbalance weight(Left side plane) (g)	42.47	4.33	Balanced
	Unbalance weight (Right side plane) (g)	42.47	181.95	**Unbalanced**

	Unbalance angle (**Left side plane**) (degree)	35.33
	Unbalance angle (**Right side plane**) (degree)	181.95

5. FIELD TEST

5.1 The SMS fitted on AS-Shaktiman-930 combine harvester was operation in the paddy field for 5 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	:	103 to 113
2.	Average number of tillers/m^2	:	227 to 273
3.	Average length of ear head, cm	:	23 to 27
4.	Average straw/grain ratio	:	1.4
5.	Average moisture, %		
	- Grain	:	13.4
	- Straw	:	65.6

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	2.0	0.4	2.3	99.1	96.6	1.21	1.84	0.518	10.33	19.92	3849.61	9.35

SUMMARY OF FIELD PERFORMANCE OF SMS

Uniformity of straw spread, CV, (percent)	18.4
Weighted mean size of chopped straw, cm	13.4

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 AS-Shaktiman-930 Combine Harvester	
1	Uniformity of straw spread, CV, (percent)	18.4
2	Weighted mean size of chopped straw, cm	13.4

7.1.2 Performance of AS-Shaktiman-930 Combine harvester with Gurdial Super SMS

S. No	Parameters	Observations
1.	Range of average speed of operation (kmph)	1.84
2.	Range of average area covered (ha/h)	0.518
3.	Maximum average fuel consumption: - (l/h) - (l/ha)	 10.33 19.92
4.	Crop throughput (tonne/h)	9.35
5.	Grain breakage in main grain outlet (%)	1.21
6.	Header losses (%)	0.12
7.	Total non-collectable losses (%)	0.4
8.	Total collectable losses (%) (un threshed + broken from main outlet)	2.0
9.	Total processing losses (%)	2.3
10.	Threshing efficiency (%)	99.1
11.	Cleaning efficiency (%)	96.6

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 AS-Shaktiman-930 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 The observed Model- NGAI as per labelling plate against Model- Gurdial Super SMS as per applicant. It **MUST** be looked into for corrective action.

10.4 The observed Serial number-95 as per labelling plate against Serial Number- NGAI-SMS-95 as per applicant. It **MUST** be looked in to for corrective action.

10.5 **Ease of operation and safety provision**
No noticeable difficulties observed during field test.

10.6 The labelling plate **MUST** be provided 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

10.7 The hardness of flail & fixed of SMS blade does not conform. It should be looked into.

10.8 Material of SMS blade is not specified. It should be specified.

10.9 Literature supplied with the machine

There was one document "Operating manual/ Part manual/ Service manual/ Literature" was supplied. However, it could be anything but the operator manual, as it lacks the relevant information on operation, adjustments and safety etc. And also does not qualify to be parts catalogue for the want of numbering/indexing the various parts/components of the SMS.

Therefore the operator manual/part's manual/Service manual needs to be brought out as per IS: 8132-1989

TESTING AUTHORITY

SANJAY KUMAR AGRICULTURAL ENGINEER	
P. K. PANDEY **DIRECTOR**	

Draft test report compiled by C. Veeranjaneyulu, Sr. Technician

11. APPLICANT'S COMMENTS

No specific comments received from the applicant.