

व्यावसायिक परीक्षण रिपोर्ट
COMMERCIAL TEST REPORT

संख्या/ No.: Machine-29/2656/2021
माह/Month: January, 2021

THIS TEST REPORT VALID UP TO : 31st JANUARY, 2028



**SONALIKA, SLSQB-1.91 SQUARE BALER
(TRACTOR OPERATED)**



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

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/>

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6.2.2 Moving blade:

Constituents	As per IS: 1511 –1979		Composition As observed (% of weight)	Remarks
	Carbon steel	Alloy steel		
Carbon (C)	0.60-0.90%	0.35-0.45%	1.5384	Does not Conform
Silicon (Si)	0.10-0.35%	0.10-0.35%	0.5402	Does not Conform
Manganese (Mn)	0.50-0.80%	0.60-0.90%	0.2298	Does not Conform
Sulphur (S)	0.05% max.	0.05% max.	0.0364	Conforms
Phosphorous (P)	0.05% max.	0.05% max.	0.0158	Conforms

7. FIELD PERFORMANCE TEST

After the harvesting of paddy crop, by a combine harvester, a Mulcher was operated in the field followed by hay rake operation to make the windrows. The baler was operated to make bales from the windrows. The field tests were conducted for 27.57 (including 1.0 hr of running in) hours in the paddy field. During the field the tractor was operated at 540 P.T.O speed. In all, 4 test trials were conducted in paddy straw field. The detailed test results are represented in the ANNEXURE- I and summarized in the ensuing table:

Sl.No.	Parameters		Range
1.	Tractor used	:	New Holland, 3630
2.	Type of straw	:	Paddy
3.	Avg. straw moisture, (%)	:	30.9 to 58.9
4.	Avg. forward speed, (kmph)	:	0.72 to 0.77
5.	Avg. Area covered, (ha/h)	:	0.044 to 0.061
6.	Avg. Time required for one hectare, (h)	:	16.46 to 22.55
7.	Avg. Field efficiency, (%)	:	33 to 48
8.	Avg. weight of each bale, (kg)	:	18.21 to 22.73
9.	No. of bales per hours	:	63 to 64
10.	Bales output,		
		-t/ha :	20.72 to 26.61
		-t/hr :	1.15 to 1.46
11.	Straw recovery, (%)	:	92 to 94
12.	Bale density, (kg/m ³)	:	115.72 to 144.64
13.	Time between two bale,(sec)	:	49.46 to 67.38
14.	Fuel consumption		
		- l/h :	2.59 to 2.89
		- l/ha :	44.72 to 59.40
		- l/t :	1.78 to 2.30

7.1 Rate of work

- The rate of work was recorded as 0.044 to 0.061 ha/h and the speed of operation varies from 0.72 to 0.77 kmph.
- The time required to cover one hectare was recorded as 16.46 to 22.55 h.
- The number of bales in hay was recorded as 63 to 64 bales per hour.



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- The mass of the bale varied from 18.21 to 22.73 kgs.
- The bale output was observed as 20.72 to 26.61 t/ha and 1.15 to 1.46 t/hr

7.2 Quality of tying and knotting the bale :

- Satisfactory.

7.3 Quality of work :

- The field efficiency and straw recovery varied from 33 to 48% and 92 to 94% respectively.
- Bale density was recorded as 115.72 to 144.64 kg/m³.

7.4 Adequacy of power of prime mover

The power of prime mover was found adequate.

8. EASE OF OPERATION & ADJUSTMENTS

No Noticeable difficulty was observed during the test.

9. DEFECTS, BREAKDOWNS AND REPAIR

No Noticeable defect or breakdown was observed during the test

10. CRITICAL TECHNICAL SPECIFICATION

Deferred till 31.03.2021 vide Ministry O.M. No 13-13/2020 M&T, (I&P) dated 22.12.2020

11. COMMENTS & RECOMMENDATIONS

- 11.1 The dimensions of primary PIC of implement does not conform, in toto, to the requirement of IS: 4931-1995 and therefore, it may be looked into for corrective action.
- 11.2 Provision against overload on PTO drive shaft both primary and secondary are not provided. It **MUST** be provided.
- 11.3 The hardness of both stationary and moving blades does not conform, to the requirements of IS: 1511-1979. This needs to be looked into for corrective action.
- 11.4 The chemical composition of both stationary and moving blades does not conform, to the requirements of IS: 1511-1979. This needs to be looked into for corrective action.
- 11.5 The grade of grease is not specified. It **MUST** be specified.

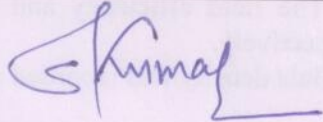
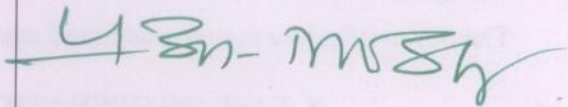
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11.6 **Technical literature**

One booklet entitled "Owner's manual" was provided with the machine for reference during test. The same, however needs to be updated as per IS: 8132-1999.

TESTING AUTHORITY:

SANJAY KUMAR AGRICULTURAL ENGINEER	
P.K. PANDEY DIRECTOR	

Draft test report compiled by Deny Hasnu, Senior Technician

12. APPLICANT'S COMMENTS

Para No.	Our Reference	Remarks
12.1	11.1	The dimension of PIC of implement will be improve at vendor/production end as per IS:4931-1995.
12.2	11.2	Provision against overload on PTO drive shaft both primary & secondary will be provide.
12.3	11.3	The hardness of both blades will be improve at vendor/production end as per IS:1511-1979.
12.4	11.4	The chemical composition of both blades will be improve at vendor/production end as per IS:1511-1979.
12.5	11.5	The grade of grease will be indic ate on machine and same in operation manual.
12.6	11.6	Technical literature will be updated as per IS:8132-1999.

