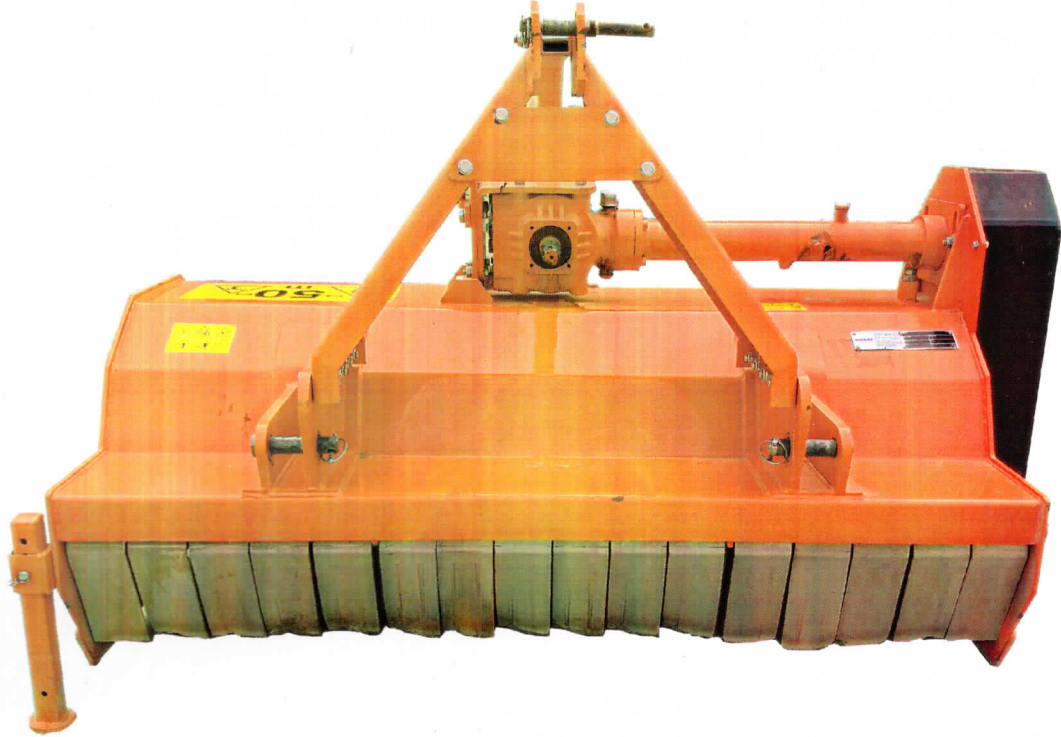


व्यावसायिक परीक्षण रिपोर्ट
COMMERCIAL TEST REPORT

संख्या/ No.: MACHINE-26/2608/2020
माह/Month: December, 2020

THIS TEST REPORT VALID UP TO : 31st December, 2027



**SONALIKA, SLLWM – 5 MULCHER
(TRACTOR MOUNTED)**



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]

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6.2 Chemical composition

The chemical composition of blades is tabulated as under:-

6.2.1 J Shape blade :-

Element	Chemical composition as per IS:6025-1982 (Reaffirmed 2014) (%)	Composition as observed (% of weight)	Remarks
Carbon	0.70-0.95	0.1828	No remarks is given because this is mulcher -blade and not harvester - blade
Manganese	0.30-0.50	0.8545	
Silicon	-	0.3958	
Phosphorus	-	0.0291	
Sulphur	-	0.0473	

6.2.2 Straight blade :-

Element	Chemical composition as per IS:6025-1982 (Reaffirmed 2014) (%)	Composition as observed (% of weight)	Remarks
Carbon	0.70-0.95	0.1931	No remarks is given because this is mulcher -blade and not harvester - blade
Manganese	0.30-0.50	0.8779	
Silicon	-	0.3810	
Phosphorus	-	0.0321	
Sulphur	-	0.0473	

6.2.3 Fixed knife blade :-

S. No.	Element	Chemical composition as per IS:6025-1982 (Reaffirmed 2014) (%)	Chemical composition as observed (%)	Remarks
1.	Carbon	0.70-0.95	0.0911	No remarks is given because this is mulcher - blade and not harvester - blade
2.	Manganese	0.30-0.50	0.7844	
3.	Silicon	-	0.1620	
4.	Phosphorus	-	0.0295	
5.	Sulphur	-	0.0422	

7. FIELD PERFORMANCE TEST

The field tests of the implement were conducted for 26 hours to assess the performance of the implement. The performance of implement is reported in **Annexure-I & II** Observations of field performance test are summarized in the ensuing table:

Machine-26/2608/2020	SONALIKA SLLWM - 5 MULCHER (TRACTOR MOUNTED) (COMMERCIAL)
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Summary of Field Performance Test

Sl. No.	Parameters/operations	
I	II	III
1.	Tractor used	Mahindra Arjun 555 DI
2.	Gear used	L - 1
3.	Type of soil	Sandy loam
4.	Height of stubble before operation(cm)	14.70 to 22.0
5.	Height of stubble After operation(cm)	5.2 to 8.0
6.	Mass of stubble in one m ² area before operation(gm)	313.3 to 688.2
7	Mass of stubble in one m ² area after operation(gm)	134.6 to 223.6
8	Straw length (cm)	8.1 to 11.8
9	Loose straw mass before operation in one meter m ² area (gm)	298.0 to 955.0
10	Straw mass in one m ² area after operation (gm)	750.4 to 1366.2
11	Loose straw length before operation (cm)	60.0 to 82.0
12	Average speed of operation (kmph)	2.55 to 2.64
13	Avg. working width (cm)	141.0 to 147.4
14	Area covered (ha/h)	0.327 to 0.357
15	Time required for one ha (h)	2.81 to 3.06
16	Field efficiency (%)	86.7 to 94.2
17	Total load of crop residue (t/ha)	8.46 to 15.21
18	Fuel consumption	
	l/h	3.80 to 4.50
	l/ha	12.0 to 52.8

7.1 Quality of work

- i) Height of stubble after operation was observed as 5.2 to 8.0 cm
- ii) Mass of stubble in one m² area after operation was observed as 134.6 to 223.6 gm
- iii) Straw mass in one m² area after operation was observed as 750.4 to 1366.2 gm

7.2 Rate of work

- i) The rate of work was recorded as 0.327 to 0.357 ha/h, and the speed of operation varies from 2.55 to 2.64 kmph.
- ii) The time required to cover one hectare was recorded as 2.81 to 3.00 h.
- iii) Total load of crop residue was observed as 8.46 to 15.21 t/ha.

7.3 Labour requirement

In all, two skilled operators are needed to ensure continuous operation of machine for day long period.

7.4 Wear analysis (on mass basis)

Wear of blades (on mass basis) was measured and recorded in ensuing tables:



Percentage wear of Mulcher rotor blades on mass basis:

Sl. No.	Position	Initial mass of blade (g)	Mass of blade after 26.50 hr. of operation (g)	Difference of weight (g)	Percentage of wear (%) after 26.50 hr.	Percentage of wear on hour basis (%)
1.	Left	567.5	558.5	9.0	1.59	0.06
	Right	550.0	537.0	13.0	2.36	0.09
	Straight	393.2	384.2	9.0	2.29	0.09
2.	Left	553.6	540.9	12.7	2.29	0.09
	Right	557.6	543.2	14.4	2.58	0.10
	Straight	391.2	376.6	14.6	3.73	0.14
3.	Left	557.6	545.2	12.4	2.22	0.84
	Right	567.7	552.4	15.3	2.69	0.10
	Straight	369.9	359.4	10.5	2.84	0.11
4.	Left	539.5	525.3	14.2	2.63	0.10
	Right	545.3	530.1	15.3	2.81	0.11
	Straight	392.1	377.1	15.0	3.83	0.14
5.	Left	551.5	540.8	10.7	1.94	0.07
	Right	559.4	547.3	12.1	2.16	0.08
	Straight	390.7	378.2	12.8	3.28	0.12

Percentage wear of Mulcher fixed knife blades on mass basis:

Sl. No.	Initial mass of blade (g)	Mass of blade after 26.50 hr. of operation (g)	Difference of weight (g)	Percentage of wear (%) after 26.50 hr.	Percentage of wear on hour basis (%)
1.	84.7	84.4	0.3	0.35	0.01
2.	87.6	87.3	0.3	0.34	0.01
3.	87.0	86.9	0.1	0.11	0.00
4.	88.8	88.6	0.2	0.23	0.01
5.	87.4	87.3	0.1	0.11	0.00
6.	90.1	89.9	0.2	0.23	0.01
7.	91.0	90.9	0.1	0.11	0.00

8. EASE OF OPERATION & ADJUSTMENTS

No noticeable difficulty was observed during the operation and adjustment of Mulcher .

9. DEFECTS, BREAKDOWN AND REPAIRS

One No. Cogged belt was damaged during the field test.

10. CRITICAL TECHNICAL SPECIFICATION

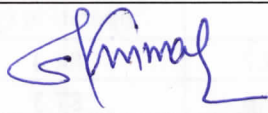

Deferred till 31.03.2021 vide Ministry O.M. No 13-13/2020 M&T, (I&P) dated 22.12.2020

Machine-26/2608/2020	SONALIKA SLLWM - 5 MULCHER (TRACTOR MOUNTED) (COMMERCIAL)
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11. COMMENTS AND RECOMMENDATIONS

- 11.1** The Dimension of three point linkage of implement does not conform, in toto, to the requirements of IS: 4468(Part-1)-1997 and therefore, it may be looked into for corrective action.
- 11.2** The Dimensions of PIC of implement does not conform, in toto, to the requirements of IS: 4931-1995 and therefore, it may be looked into for corrective action.
- 11.3** The grade of grease is not specified. It **MUST** be specified.
- 11.4** One No. Cogged belt was damaged. It **MUST** be looked into for take corrective action.
- 11.5** Labeling plate should be riveted on machine with following information.
1. Name and address of manufacturer
 2. Country of origin
 3. Make
 4. Model
 5. Year of manufacturer
 6. Serial number
 7. Type
 8. Size
 9. Required size of prime mover (kW)
 10. Weight (kg)
- 11.6 Technical literature:-**
One booklet entitled "Owner's manual" was provided 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 Manoj Sharma, B. Tech (Ag. Engg)

12. APPLICANT'S COMMENTS

Para No.	Our reference	Applicant comments
12.1	11.1 to 11.6	We will take care the same in our regular production/vendor end.