

व्यावसायिक परीक्षण रिपोर्ट
COMMERCIAL TEST REPORT

संख्या / No. : IMP- 610/1491
माह / Month : March, 2013

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**TRACTOR DRAWN ROUND BALER
“STAR MRB-0870”**



भारत सरकार
कृषि मंत्रालय
(कृषि एवं सहकारिता विभाग)

**GOVERNMENT OF INDIA
MINISTRY OF AGRICULTURE
(DEPARTMENT OF AGRICULTURE & COOPERATION)**

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5.5.10 Total number of lubricating points :

Greasing	:	13
Oiling	:	11
Grease cup/pipe	:	02

5.5.11 Maintenance schedule of Baler:-

The details of greasing and oiling points are given in Table 4 :-

Table 4: Lubricating points:

I) Greasing point:-

S.No.	Greasing point location	Number	Schedule time
1.	Housing linkage system	02	Daily after operation
2.	Wind Arm support	01	-do-
3.	Connecting Linkages	02	-do-
4.	Crank bar	01	-do-
5.	Drive shaft	02	-do-
6.	Roller chain	05	-do-
7.	Wheel bearing cup	02	Seasonally
Total greasing point		15	

II) Oiling points:-

S.No.	Oiling point location	Number	Schedule time
1.	Tension arm pivot	02	Daily after operation
2.	Link pivot each of 2 on both side	04	-do-
3.	Tail swing pivot at both ends LHS & RHS	02	-do-
4.	Power package	01	100 h of operation
5.	Main gear box housing	01	100 h of operation
6.	Warm gear box housing	01	200 h of operation
Total oiling point		11	

6. FIELD TEST

The Baler operated by Same 503 tractor at engine throttle setting corresponding to 2075 rpm was tested in the field for 35.38 hours in paddy straw field after the field harvesting by the combine harvester to assess field performance of baler with regard to quality of work, rate of work, fuel consumption, safety and soundness of construction etc. The details of tractor used for field operation are given in Para 5.1.2 and Annexure I. The tractor pto speed was maintained at 540 rpm during operation. The performance of machine is represented in Annexure-II and the summary of the field performance parameters are given in Table-5.

Table 5 : Summary of field performance :-



6.1 Rate of work and fuel consumption

The rate of work for paddy straw was recorded as 0.319 to 0.446 ha/h at the forward speed 2.03 to 3.54 kmph.

The time required to cover one hectare was recorded as 2.24 to 3.13 h.

6.2 Quality of work :

The number of bales output recorded as 21 to 55 bales/h with bale weight ranging from 14.65 to 28.85 kg.

The field efficiency and straw recovery varied from 61.19 to 84.14 and 88.15 to 98.06 % respectively.

Straw output was recorded as 0.481 to 0.912 t/h with bale density from 34.28 to 137.66 kg/m³.

No. of windings observed as 6 to 10, against the setting of 8 no. of winding.

Percentage of coefficient of variation in weight of a bale is observed from 4.16 to 11.19%.

13 COMMENTS AND RECOMMENDATIONS

1. Quality of bale was observed to be satisfactory.
2. The field efficiency and straw recovery varied from 61.19 to 84.14 and 88.15 to 98.06 % respectively, which is considered normal.
3. Maneuverability of tractor with baler was found to be satisfactory and also the quality of work was observed to be satisfactory. It is transported on three point linkage system during transportation as well as while making the turn at the end of each pass during field operation.
4. Dimensions of splined end of power input gear and its corresponding hub shaft do not comply with the IS:4931-2004. This should be incorporated at regular production level
5. The pto power requirement of baler was observed as 2.36·kW for bailing of paddy straw which is 6.80% pto power of the tractor.
6. Two supporting Pneumatic ribbed, tubeless wheels are provided for transportation as well as for maintaining the ground clearance of pick up tines during operation of the machine.
7. Percentage of uniformity in weight of a bale at given moisture percentage is observed from 88.81 to 95.84%.
8. The weight of individual bale varies at different moisture content of straw.

14. LITERATURE

The manufacturer has developed the literature of machine in English language i.e. Operator's manual, service manual, part's catalogue etc. The literature is found to be adequate. However, it needs to be brought out in Hindi and other regional language's for guidance of users and service personnel's as per IS : 8132-1999.

TESTING AUTHORITY

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Applicant's comments

Page 15/Para 14 – We will bring out literatures in Hindi and other regional languages in due course of time.