

**THIS TEST REPORT IS VALID UPTO 30.11.2030**



**SQUARE BALER SHAKTIMAN BALE MASTER (SBM-175)  
(TRACTOR DRAWN, PTO POWERED)**



सत्यमेव जयते

भारत सरकार

Government of India

कृषि एवं किसान कल्याण मंत्रालय

Ministry of Agriculture and Farmers Welfare

कृषि एवं किसान कल्याण विभाग

Department of Agriculture and Farmers Welfare

दक्षिणी क्षेत्र कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

Southern Region Farm Machinery Training and Testing Institute

ट्रैक्टर नगर, गार्लदिन्ने-515 731, जिला: अनंतपुर (आं. प्र.)

Tractor Nagar, Garladinne-515 731, District: Anantapur (A.P.)

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<b>Machine- 536/1575</b>	<b>Square/ Rectangular Baler Shaktiman Bale Master (SBM-175) (Tractor Drawn, PTO Powered)</b>
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**Manufacturer** : M/s. Tirth Agro Technology Pvt. Ltd.,  
SHAKTIMAN, Survey No. 108/1,  
Plot No. B, NH - 27, Near Bharudi Toll  
Plaza, Bhunava (Village), Gondal (Taluka),  
Rajkot Dist.- 360 311, Gujarat, India.

**Applicant** : The manufacturer

**SQUARE/RECTANGULAR BALER SHAKTIMAN BALE MASTER (SBM-175)  
(Tractor Drawn, PTO Powered)**

Report No.: **Machine-536/1575**

Month: **December**

Year: **2023**



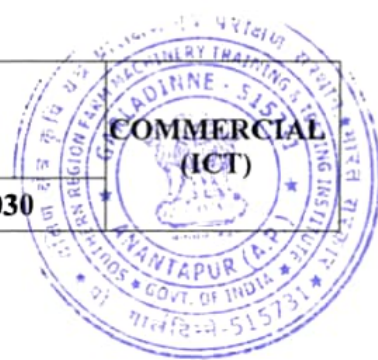
**Government of India  
Ministry of Agriculture and Farmers Welfare  
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<b>Machine-536/1575</b>	<b>Square/ Rectangular Baler Shaktiman Bale Master (SBM-175) (Tractor Drawn, PTO Powered)</b>
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Type of test : **COMMERCIAL TEST**  
 Period of test : 05.12.2022 to 05.01.2023  
 Test Report No. : **Machine-536/1575**  
 Month / Year : November, 2023

- i) The results reported in this report are observed values and no corrections have been applied for atmospheric and site conditions.
- ii) The data given in this report pertain to the particular machine randomly selected for test by the testing authority at applicant's site.
- iii) The results presented in this report do not, in any way, attribute to the durability of the machine.
- iv) This report should not be reproduced in part or full without prior permission of the Director, Southern Region Farm Machinery Training and Testing Institute, Garladinne, Anantapur (A.P.).
- v) Initially the firm has submitted the test sample under confidential test, but vide requesting letter dated **24.03.2023**, has requested to convert the nature of test from confidential to commercial.
- vi) This is a report on Commercial Test of Square Baler named "**Square/ Rectangular Baler Shaktiman Bale Master (SBM-175) Tractor Drawn, PTO Powered**" This report is valid up to **30.11.2030**, Vide Ministry's O.M. No. 13-24/2018-M&T (I&P) dated 19.09.2018.

**SELECTED CONVERSIONS**

<b>S. No</b>	<b>Units</b>	<b>Conversion Factor</b>
<b>1</b>	<b>Force</b>	
	1 kgf	9.80665 N
		2.20462 lbf
<b>2</b>	<b>Power</b>	
	1 hp	1.01387 metric hp (Ps) 745.7 W
	1 Ps	735.5 W
	1 kW	1.35962 Ps
<b>3</b>	<b>Pressure</b>	
	1 psi	6.895 kPa
	1 kgf/cm <sup>2</sup>	98.067 kPa = 735.56 mm of Hg
	1 bar	100 kPa = 10 N/cm <sup>2</sup>
	1 mm of Hg	1.3332 m-bar




Machine- 536/1575	<b>Square/ Rectangular Baler Shaktiman Bale Master (SBM-175) (Tractor Drawn, PTO Powered)</b>	<b>COMMERCIAL (ICT)</b>
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## 12. COMMENTS & RECOMMENDATIONS

- 12.1 Provision for bale counting mechanism is provided in the baler.
- 12.2 The amplitude of mechanical vibration on various assemblies of the square baler was observed to the maximum extent of 332 micron, which is on higher side and, is directly concerned with the useful life of the components. In view of the above, this should be looked into.
- 12.3 Max. Noise level at By stander position was observed as 97 dB (A). The noise observed is more than the limit specified by ILO. The sound pressure level is directly influencing the Human/Operator's Health, Safety and Comfort; and therefore suitable corrective action may be taken.
- 12.4 Hardness of stationary (channel knife) & movable (piston knife) blades of plunger unit was observed as 53 to 57 & 48 to 51 HRC against the IS 1511:1979 (Reaffirmed 2012) requirement of 35 to 50 HRC. This should be looked into for corrective action.
- 12.5 Chemical composition of stationary & movable blades of plunger unit are not conforming to IS 1511: 1979 (Reaffirmed 2012). This should be looked into for corrective action.
- 12.6 Dimensions of power input connection (PIC) of universal drive shaft is conforming the relevant code i.e. IS 4931: 1995.
- 12.7 The provided labeling plate should be as per the requirement IS.
- 12.8 Technical literature:**  
Operator's manual & parts manual in English were supplied with the Square Baler for reference during the test. However, this may be brought out in Hindi and other regional languages as per IS 8132:1999 (Reaffirmed 2004) for the sake of user & technical personnel.

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**TESTING AUTHORITY:**

 <b>PRAMOD YADAV</b> AGRICULTURAL ENGINEER	 <b>D.C. MOULI</b> AGRICULTURAL ENGINEER
 <b>Dr. B.M. NANDEDE</b> DIRECTOR	

**13. APPLICANT'S COMMENTS**

Sr no	Our reference	Applicant's comments
1	12.2	It was combined vibration of tractor and baler. Also, machine intend to work in dusty condition, so plunger bearing runs on metal guide plates in dry condition which leads to vibration. However, we will look into feasibility of reducing vibration.
2	12.3	Suggestion is noted, will examine and look into possibility of reducing noise level and will take appropriate action. We will also advise operators to use ear plugs while operating machine and will mention same in operator manual.
3	12.4	We are using boron steel for blades which is most suitability of carbon or alloy steel as per IS 1511-1979 for this particular application and incorporate accordingly
4	12.5	We are using boron steel for blades which most suitability of carbon or alloy steel as per 1511-1979 for this particular application and incorporate accordingly
5	12.8	We will take in consideration soon.
6	11	We will take in consideration soon.