

व्यावसायिक परीक्षण रिपोर्ट (प्रारंभिक)

संख्या/No: PT- 171/1723

COMMERCIAL TEST REPORT (INITIAL)

माह/Month: September, 2024

[ONLINE TESTING as per new testing regime]  
THIS TEST REPORT IS VALID UP TO 31.08.2031



**BHEEM, BMT 1200DX POWER TILLER**



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.)

[An ISO 9001:2015 CERTIFIED INSTITUTE]

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**IMPORTANT INFORMATION**

The Government of India, Ministry of Agriculture and Farmers' Welfare has directed, vide an OM No. 9-9/2023-M&T(I&P) (122999) dated 08.01.2024, that since 1<sup>st</sup> April, 2024, only mandatory tests will be carried out on a power tiller unless applicant has expressly requested for optional tests as well, mentioned in the above captioned OM.

In the instant case, there is no request from the applicant to carry out the optional tests hence only Mandatory Tests, as given below, have been conducted and reported in this report: -

1. Rotary Shaft Performance Test
2. Drawbar Performance Test
3. Brake Test
4. Noise level test
5. Tuning Ability Test
6. Nominal Speed Test
7. Haulage Test
8. Field Test
9. Torture test
10. Material & Chemical Composition

Manufacturer : M/s Renaissance Power Pvt. Ltd.,  
S.F. No. 92-A/2, Door No.1/138, Karadivavi  
pudhur, Karadivavi (PO), Palladam (TK),  
Coimbatore-641658, Tamil Nadu.

Applicant : The manufacturer

Indigenous/ Imported : **Indigenous**

**BHEEM, BMT 1200 DX POWER TILLER**

Report No.: PT- 171/1723

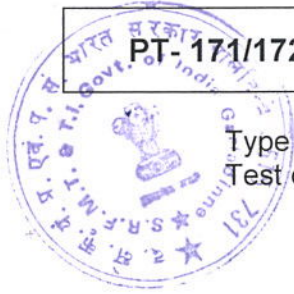
Month: **September**Year: **2024**

**Government of India**  
**Ministry of Agriculture and Farmers Welfare**  
**Department of Agriculture and Farmers Welfare**  
**Southern Region Farm Machinery Training and Testing Institute**  
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PT- 171/1723

**BHEEM, BMT 1200 DX POWER TILLER - COMMERCIAL (INITIAL)**

**THIS TEST REPORT IS VALID UPTO: 31.08.2031**

Type of test : INITIAL COMMERCIAL TEST (ICT)  
Test code/Procedure : (i) Ministry's Office Memorandum No. 9-9/2023-M&T(I&P) (122999) dated 08.01.2024.  
(ii) IS: 9935-2002 with all the applicable standards referred to therein.  
(iii) IS: 13539-2018  
Period of Test : 29.07.2024 to 23.08.2024  
Test Report No. : **PT- 171/1723**  
Month/Year : **September, 2024**

- 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 submitted by the applicant for test.
- 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.).

This test report supersedes the following test report.

S. No.	Make & Model of the tractor	Nature of test	Test report No.
1.	Bheem, BMT 1200 DX	Commercial (Initial)	PT-163/1465, 2023

- v) This is a report on commercial test of power tiller named "BHEEM, BMT 1200 DX POWER TILLER". This report is valid up to 31.08.2031, Vide Ministry's O.M. No. 13-22/2020-M&T (I&P) dated 12.12.2023.

#### SELECTED CONVERSIONS

S. No	Units	Conversion factor
1	<b>Force</b>	
	1 kgf	9.80665 N
		2.20462 lbf
2	<b>Power</b>	
	1 hp	1.01387 metric hp (Ps)
		745.7 W
	1 Ps	735.5 W
	1 kW	1.35962 Ps
3	<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

#### **STATEMENT**

*An item marked "C" indicates to the test report user that the information has been checked by the Testing Institute and reported herein whereas, an item marked "D" indicates that the manufacturer's declaration, as such, has been reported.*

## 8. SUMMARY OF OBSERVATIONS, COMMENTS &amp; RECOMMENDATIONS

- 8.1 On the basis of test conducted the performance results have been summarized as evaluative (mandatory) / Non-evaluative (Non-mandatory) parameters applicable for Qualifying Minimum Performance criteria as per Clause-4.1 (Table-1) of IS: 13539-2018 (Second revision) for acceptance of the Power Tiller for the purpose of subsidies/NABARD financing are summarized as under:

Sl. No.	Characteristic	Category (Evaluative / Non Evaluative)	Requirements as per IS: 13539-2018 (Second revision)	Values declared by the applicant/ (D) Requirement (R)	As observed	Whether meets the requirements (Yes/No)
1	2	3	4	5	6	7
<b>MANDATORY TESTS: (As per Ministry's Office Memorandum No. 9-9/2023-M&amp;T(I&amp;P) (122999) dated 8<sup>th</sup> of January, 2024).</b>						
8.1.1	<b>Rotary shaft performance:</b>					
a)	Max. Power test, (kW)	Evaluative	Minimum 80 percent of observed maximum bhp of power tiller	6.5	6.49	Yes
b)	Power at rated engine speed, (kW)	Evaluative	Minimum 75 percent of observed rated bhp of power tiller	6.0	6.49	Yes
c)	Specific fuel consumption corresponding to power at rated engine speed, (g/kWh)	Evaluative	To be declared by the Manufacturer with a tolerance of + 5 percent	290	294	Yes
d)	Max. equivalent rotary shaft torque, Nm	Evaluative	To be declared by the Manufacturer with a tolerance of $\pm 8$ percent	250	240	Yes
e)	Max. operating temp. of rotary transmission oil, (°C)	Evaluative	To be declared by the Manufacturer	100	46	Yes
8.1.2	<b>Drawbar performance:</b>					
i)	Maximum drawbar pull corresponding to 15% wheel slip, (Kgf)	Evaluative	Minimum 65 percent of static mass with ballast	255	259	Yes
ii)	Maximum drawbar power, (kW)	Evaluative	To be declared by the Manufacturer with a tolerance of -10 percent	3.0	3.59	Yes
iii)	Maximum transmission oil temperature, (°C)	Evaluative	To be declared by the Manufacturer	100	46	Yes



**8.1.13.2 Rotary blades:**

- i) The hourly rate of wear of blades for dry land and wet land operations was observed as 0.61 to 0.83 percent and 0.42 to 0.71 percent respectively.
- ii) Remaining constituents except, Carbon, Silicon & Chromium content of chemical composition of rotary blade conforms to IS 6690:1981 (Reaffirmed 2012).
- iii) The dimension of rotary blades does not conform to the requirement of IS 6690:1981 (Reaffirmed 2012).
- iv) The hardness of rotary blades does not conform to the requirement of IS 6690:1981 (Reaffirmed 2012).

**8.1.13.3 Recommendation with regard to safety on power tiller:**

- i) As per IS 12239 (Part 3): 1988, "maximum safe speed" with trailer is required to be specified by the manufacturer. Necessary action may be taken in this regard.
- ii) Provision of spark arresting device may be considered for incorporation in the exhaust system.
- iii) The handle grip does not meet the requirement of IS 11858:1986. This may be looked into for compliance.

**8.1.13.4** Provided metallic labeling plates should be as per IS 10273:1987.

**8.1.13.5 Adequacy of literature supplied with the machine:**


The following literature was supplied with the test sample for reference during the test:

**Operator cum service manual and parts catalogue for power tiller and maintenance manual and parts catalogue of engine in English in a separate booklet.**

However, it is recommended that the same may be brought out in accordance with IS8132:1999 (Reaffirmed 2004) with inclusion of, inter alia, the following: -

Fuel saving tips.

**TESTING AUTHORITY**

<p><b>Er. PRAMOD YADAV</b> AGRICULTURAL ENGINEER</p>	
<p><b>Dr. B.M. NANDEDE</b> DIRECTOR</p>	