

[ONLINE TESTING as per new testing regime]
THIS TEST REPORT IS VALID UP TO 29.02.2032



SAMYAK MOTORS PRIVATE LIMITED, BALRAM 14DI 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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PT- 172/1850	SAMYAK MOTORS PRIVATE LIMITED, BALRAM 14DI POWER TILLER
	THIS TEST REPORT IS VALID UPTO: 29.02.2032

COMMERCIAL
(INITIAL)

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 1st 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 Samyak Motors Private Limited, 3/34C,
Athipalayam Road, Athipalayam, Coimbatore,
Tamilnadu-641110.

Applicant : The manufacturer

Indigenous/ Imported : Indigenous

SAMYAK MOTORS PRIVATE LIMITED, BALRAM 14DI POWER TILLER

Report No.: PT-172/1850

Month: March

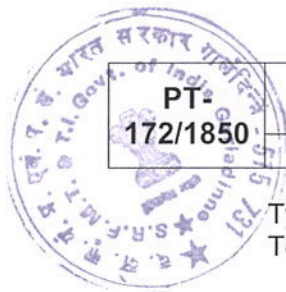
Year: 2025



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PT-
172/1850

**SAMYAK MOTORS PRIVATE LIMITED, BALRAM 14DI
POWER TILLER**

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- 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 : 14.02.2025 to 07.03.2025
Test Report No. : **PT-172/1850**
Month/Year : **March, 2025**
- 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.).
v) This is a report on commercial test of power tiller named "**SAMYAK MOTORS PRIVATE LIMITED, BALRAM 14DI POWER TILLER**". This report is valid up to 29.02.2032, 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	Force	
	1 kgf	9.80665 N
		2.20462 lbf
2	Power	
	1 hp	1.01387 metric hp (Ps)
		745.7 W
	1 Ps	735.5 W
	1 kW	1.35962 Ps
3	Pressure	
	1 psi	6.895 kPa
	1 kgf/cm ²	98.067 kPa = 735.56 mm of Hg
	1 bar	100 kPa = 10 N/cm ²
	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.

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	POWER TILLER	
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7.3 Hardness of blades:

S. No.	Range of hardness (HRC)				Remarks	
	As observed		As per IS 6690:1981 (Reaffirmed 2012)			
	Shank portion	Edge portion	Shank portion	Edge portion	Shank portion	Edge portion
1.	Hatchet blades					
	32 to 41	47 to 52	37 to 45	56 ± 3	Does not conform	Does not conform

8.SUMMARY OF OBSERVATIONS, COMMENTS & 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:

SI. 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
MANDATORY TESTS: (As per Ministry's Office Memorandum No. 9-9/2023-M&T(I&P) (122999) dated 8 th of January, 2024).						
8.1.1	Rotary shaft performance:					
a)	Max. Power test, (kW)	Evaluative	Minimum 80 percent of observed maximum bhp of power tiller	7.8	8.0	Yes
b)	Power at rated engine speed, (kW)	Evaluative	Minimum 75 percent of observed rated bhp of power tiller	7.8	8.0	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	350	318	Yes
d)	Max. equivalent rotary shaft torque, Nm	Evaluative	To be declared by the Manufacturer with a tolerance of ± 8 percent	370	376	Yes
e)	Max. operating temp. of rotary transmission oil, (°C)	Evaluative	To be declared by the Manufacturer	120	92	Yes
8.1.2	Drawbar performance:					
i)	Maximum drawbar pull corresponding to 15% wheel slip, (Kgf)	Evaluative	Minimum 65 percent of static mass with ballast	2.35 (Minimum)	3.47	Yes



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1	2	3	4	5	6	7
ii)	Maximum drawbar power, (kW)	Evaluative	To be declared by the Manufacturer with a tolerance of -10 percent	3.8 (Minimum)	4.80	Yes
iii)	Maximum transmission oil temperature, (°C)	Evaluative	To be declared by the Manufacturer	110	54	Yes
8.1.3 Brake performance:						
8.1.3.1 Service brake performance (As per CMVR):						
Maximum stopping distance at a force, with the pedal effort not exceeding 600 N for the power tiller coupled to a trailer with gross combination weight not exceeding 1.5 tonnes, (m):						
a)	Service brake	Evaluative	--	7.00	5.28	Yes
b)	Maximum force exerted to apply the brake, (N)	Evaluative	--	600	538	Yes
c)	Observation on rotation of drive wheels at the slope of 12 percent with trailer having gross mass recommended for haulage	Evaluative	No rotation of drive wheels	---	No rotation of drive wheels	Yes
8.1.3.2 Parking brake:						
	Observation on rotation of cranked wheels at the slope of 18 percent, facing up and facing down	Evaluative	No rotation of drive wheels at a slope of 18 percent facing up and facing down	No rotation of drive wheels	No rotation of drive wheels	Yes
8.1.4 Noise level:						
a)	Maximum ambient noise emitted by the power tiller, dB(A)	Evaluative	As per CMVR (88)	--	83	Yes
b)	Maximum noise at operator's ear level, dB (A)	Evaluative	As per CMVR (98)	--	97	Yes
8.1.5 Haulage Performance:						
a)	Gross load of trailer, (t)	Non-evaluative	To be declared by the manufacturer	1.5	1.5	Yes
b)	Distance traveled /liter of fuel consumption, (km)	Non-evaluative	To be declared by the manufacturer with a tolerance of +10 percent	12	11.12	Yes

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1	2	3	4	5	6	7
c)	Fuel consumption, (cc/km/t)	Non-evaluative	-do-	80	59.95	Yes
8.1.6	Wetland cultivation:					
	Suitability for Wetland Cultivation	Evaluative	The entry of mud/ water should not take place in components/ sub-assemblies such as engine, clutch, gear box, chain case and rotary shaft housing	---	No entry of mud and / or water was observed	Yes
8.1.7	OPTIONAL TESTS: Not applied by applicant.					
8.1.8	Stationary operations:					
	Stationary operations	Evaluative	Should have the provision for power outlet for stationery operations or recommended agricultural appliances.	---	Provided	Yes
8.1.9	Safety requirements:					
a)	Provision of guards on moving parts including rotavator	Evaluative	---	---	Provided	Yes
b)	Location and direction of exhaust emission to be away from the operator and machines for stationary operation	Evaluative	Yes	---	Provided	Yes
c)	Covers on hot parts	Evaluative	Yes	---	Provided	Yes
d)	Locking of parking stand lever	Evaluative	Yes	---	Provided	Yes
e)	Protective shield for rotary to prevent flying of mud and stones	Evaluative	Yes	---	Provided	Yes
f)	Accidental engaging of reverse speed gear when rotary is in operation.	Evaluative	Yes	---	Provided	Yes
g)	Provision of head lights	Evaluative	Yes	---	Provided	Yes
8.1.10	Literature	Evaluative	To be submitted by the manufacturer along with the application	---	Provided	Yes



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1	2	3	4	5	6	7
8.1.11	Torture Test	Evaluative	The Power Tiller should successfully complete the Torture Test, operated on Torture Test Track at a speed of 2.0 kmph for distance of 2 km length.	---	No loosening of bolts, crack or break down of sheet metals, components was observed during Torture Track Test performance	Yes
8.1.12	Material test: The manufacturer shall declare the material specification (Chemical Composition) of the following critical components of the power tiller (minimum 03 no's of chemical constituents on weight basis (in percent) of each critical component), as given below:					
a)	Crank case	Evaluative	To be declared by the Manufacturer	± 5%	Conforms (Refer Para 4.10.1.1)	Yes
b)	Cylinder head	-do-	-do-	-do-	Conforms (Refer Para 4.10.1.2)	Yes
c)	Crank shaft	-do-	-do-	-do-	Conforms (Refer Para 4.10.1.3)	Yes
d)	Connecting rod	-do-	-do-	-do-	Conforms (Refer Para 4.10.1.4)	Yes
e)	Cam shaft	-do-	-do-	-do-	Conforms (Refer Para 4.10.1.5)	Yes
f)	Transmission case	-do-	-do-	-do-	Conforms (Refer Para 4.10.1.6)	Yes
g)	Engine gears	-do-	-do-	-do-	Conforms (Refer Para 4.10.1.7)	Yes
h)	Transmission gears	-do-	-do-	-do-	Conforms (Refer Para 4.10.1.8)	Yes
8.1.13	CATEGORY OF BREAKDOWNS/DEFECTS:					
1.	Critical	Evaluative	No critical breakdown	--	None	Yes
2.	Major	Evaluative	Not more than one	--	None	Yes
3.	Minor	Evaluative	Not more than three and frequency of each should not more than two.	--	None	Yes

8.1.14 Salient observations:

8.1.14.1 Rotary shaft performance:

- The maximum and rated rotary shaft power was recorded as 8.0 kW against the declared value of 7.8 kW respectively.
- The specific fuel consumption corresponding to power at rated engine speed was measured as 318 g/kWh against the declared value of 350 g/kWh.
- The maximum equivalent rotary shaft torque was observed as 376 Nm against the declared value of 370 Nm.

8.1.14.2 Rotary blades:

- The hourly rate of wear of blades for dry land and wet land operations was observed as 0.21 to 0.30 percent and 0.28 to 0.43 percent respectively.
- Remaining constituents except, Carbon, Silicon & Manganese content of chemical composition of rotary blade conforms to IS 6690:1981 (Reaffirmed 2012).
- The dimension of rotary blades does not conform to the requirement of IS 6690:1981 (Reaffirmed 2012).
- The hardness and chemical analysis of rotary blades does not conform to the requirement of IS 6690:1981 (Reaffirmed 2012).

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8.1.14.3 Recommendation with regard to safety on power tiller:

- 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.
- Provision of spark arresting device may be considered for incorporation in the exhaust system.
- The handle grip does not meet the requirement of IS 11858:1986. This may be looked into for compliance.

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

8.1.14.5 Adequacy of literature supplied with the machine:


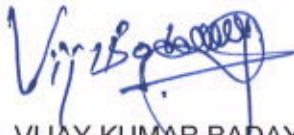


The following literature was supplied with the test sample for reference during the test:

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

 Er. PRAMOD YADAV AGRICULTURAL ENGINEER	 Er. VIJAY KUMAR BADAYA SENIOR AGRICULTURAL ENGINEER
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  Dr. B.M. NANDEDE DIRECTOR </div> <div style="text-align: center;">  </div> </div>	

9. APPLICANT'S COMMENTS

-NIL-