

व्यावसायिक परीक्षण रिपोर्ट (प्रथम बैच)
COMMERCIAL TEST REPORT (1st Batch)
(ONLINE TESTING)

संख्या /No.: Machine-540/1581
माह/Month: January, 2024

THIS TEST REPORT IS VALID UPTO 31/12/2032



**SHAKTIMAN PADDY ROPAK 37 (SPR-37) SELF PROPELLED
WALK BEHIND RICE TRANSPLANTER**



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

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

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Machine-
540/1581

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COMMERCIAL(1st Batch test)**

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Manufacturer

: M/s. Tirth Agro Technology Pvt. Ltd.,
"SHAKTIMAN", Survey No. -108/1,
Plot No. B, NH-27, Nr. Bharudi Toll
Plaza, Bhunava (Village),
Taluka: Gondal, Dist., Rajkot,
State: Gujarat - 360 311, India.

Applicant

: The manufacturer

**SHAKTIMAN PADDY ROPAK 37 (SPR-37) SELF PROPELLED
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Report No. : Machine-540/1581

Month: January

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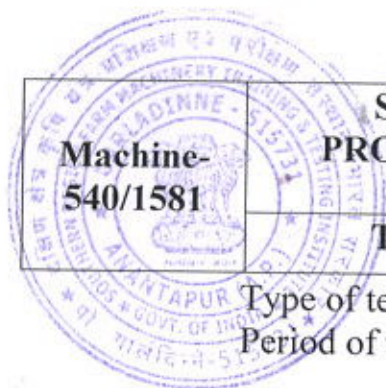
सत्यमेव जयते

**Government of India
Ministry of Agriculture and Farmers Welfare
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COMMERCIAL(1st Batch test)**

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Type of test : COMMERCIAL (1st Batch Test)
Period of test : 21.12.2023 to 17.01.2024

Test Report No. : Machine-540/1581
Month / Year of release : January, 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 selected 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) This is the first batch test report and therefore, should be read in conjunction with the test report of base model i.e "SHAKTIMAN PADDY ROPAK 37 (SPR-37) SELF PROPELLED WALK BEHIND RICE TRANSPLANTER" which was test under Initial commercial Testing vide Test Report No.Machine-260/944 released in December, 2018. **This report is valid up to 31/12/2032 Vide Ministry's O.M. No. 13-22/2020-M&T (I&P) dated 12.12.2023.**

SELECTED CONVERSIONS

Sl. 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

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**17. SUMMARY OF OBSERVATIONS, COMMENTS AND
RECOMMENDATIONS**

17.1 Engine Performance:

- 17.1.1 The maximum power and rated power were observed as 2.32 & 2.23 kW under natural ambient condition against the declared value of 2.6 & 2.1 kW respectively.
- 17.1.2 Specific fuel consumption of engine corresponding to maximum & rated power was recorded as 445 & 432 g/kWh respectively.
- 17.1.3 Max. torque was observed as 13.30 Nm
- 17.1.4 Maximum noise at operator's ear level was observed as 92 dB (A).
- 17.1.5 The amplitude of mechanical vibration on various assemblies of the rice transplanter was observed to the extent of max. 247 microns, which is on higher side and is directly concerned with Operator's Health, Safety and Comfort. Besides, it also adversely affects the useful life of the components. In view of the above, this should be taken care for corrective action.

17.2 Field Test

The transplanter was operated in varying field conditions for a total period of 26.0 hours for transplanting ASD-16 variety of paddy seedlings. The results are summarized as under:-

- Av. forward speed of operation was observed as 2.38 to 2.54 kmph.
- Av. area covered was recorded as 0.201 to 0.221 ha/h.
- Av. depth of transplanting was recorded as 5.52 to 6.07 cm.
- The spacing between rows was recorded as 30 cm.
- Av. number of plants per hill was recorded as 6.2 to 9.5.
- Av. spacing between hills was recorded as 16.0 to 16.2 cm.
- Av. total number of hills in 5 m row length was recorded as 32.
- Av. number of hills per sq. m. was recorded as 28.
- Av. percentage of missed hills was recorded as Nil to 1.18.
- Av. percentage of floating seedlings was recorded as Nil to 1.18.

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- Av. percentage of buried seedlings was recorded as Nil to 1.18.
- Av. percentage of damaged seedling was recorded as Nil to 1.18.
- The total percentage of transplanting faults was recorded as 1.18 to 2.36
- The consumption of nursery trays was recorded as 207.5 to 245 numbers per hectare.
- The hourly fuel consumption was recorded as 0.891 to 0.924 l/h and fuel required for planting of one hectare area was recorded as 4.09 to 4.98.

17.2.1 The quality of work was observed as smooth during entire transplanting operation. The overall performance of the machine was found satisfactory.

17.3 Components/assembly inspection:

17.3.1 The transplanter and engine were dismantled after 37.42 hours of operation and wear of critical components were observed within the limits.

17.3.2 The main gear box, planting box, planting arm drive mechanism and Bearings were dismantled after completion of field operation and found in satisfactory working condition.

17.4 Safety provisions:




The machine is provided with various safety provisions while working in the field or moving on the road as mentioned in the **clause 5.17** of this test report.

Machine- 10/1581	SHAKTIMAN PADDY ROPAK 37 (SPR-37) SELF PROPELLED WALK BEHIND RICE TRANSPLANTER COMMERCIAL(1st Batch test)
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7.5 Technical literature:

Operator's manual cum parts manual of Paddy Ropak in a single booklet was supplied with the test sample for reference during the test. It is however, recommended that same may be revised in Hindi and other regional languages as per IS 8132: 1999 (Reaffirmed 2004) for the sake of user & technical personnel.

TESTING AUTHORITY

 Er. PRAMOD YADAV AGRICULTURAL ENGINEER	 Er. D.C. MOULI AGRICULTURAL ENGINEER
 Dr. B.M. NANDEDE DIRECTOR	



18. Applicant comments

No.	Page No/Clause No.	Applicant comments
1	44/17.1.5	We will look into the possibilities of reducing the vibration level.
2	46/17.5	We will update operator cum part manual & other available literature in accordance with IS 8132:1999 (Reaffirmed 2004)