

THIS REPORT IS VALID UPTO 31.10.2028



**R.K. MANUFACTURES (WALSON) RK-PW-520DES POWER WEEDER**



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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Website: <http://srfmtti.dacnet.nic.in/>

|                       |   |                             |
|-----------------------|---|-----------------------------|
| Machine -<br>534/1572 | <b>R.K. MANUFACTURES (WALSON)<br/>RK-PW-520DES POWER WEEDER</b> | <b>COMMERCIAL<br/>(ICT)</b> |
|                       | <b>THIS TEST REPORT IS VALID UP TO 31.10.2028</b>               |                             |



Manufacturer,(apa) : M/S Chongqing Diligence General Machinery Co Ltd, Add :Building 1, No.1 Kangchao RD, Huaxi , Dis Chongqing, **China**

Applicant : M/S. R.K. Manufactures  
Nirmal Industries Area, Survey No.30,  
NH. 8/B, Vavdi, Rajkot (Gujarat)-360004

**R.K .MANUFACTURES (WALSON) RK-PW-520DES POWER WEEDER**

Report no.: Machine -534/1572

Month: November

Year: 2023



सत्यमेव जयते

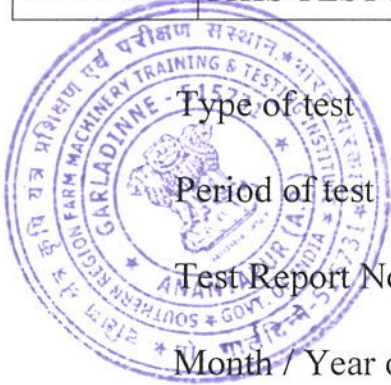
**Government of India**  
**Ministry of Agriculture and Farmers Welfare**  
**Department of Agriculture and Farmers Welfare**  
**Southern Region Farm Machinery Training and Testing Institute**  
**Tractor Nagar, Garladinne-515 731, District: Anantapur (A.P.)**  
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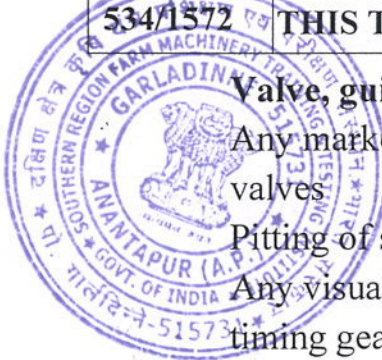
Type of test : COMMERCIAL  
 Period of test : 11.10.2023 to 29.11.2023  
 Test Report No. : **Machine -534/1572**  
 Month / Year of release : November, 2023

- 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 by testing authority.
- iii) The results presented in this report do not, in any, way attribute to the durability of the machine.
- iv) This Test Report should not be reproduced in part or full without prior permission of the Director, Southern Region Farm Machinery Training & Testing Institute, Garladinne, Anantapur (A.P.).
- v) This is a report on Commercial Test of Power Weeder named "**R.K. MANUFACTURES (WALSON) RK-PW-520DES POWER WEEDER**". This report is valid up to **31.10.2028**, Vide Ministry's O.M. No. 13-24/2018-M&T (I&P) dated 19.09.2018.

#### 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                   |

|                       |   |                     |
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| Valve, guides and timing gears:                   | Observation |
|---|-------------|
| Any marked sign of overheating of valves          | : None      |
| Pitting of seat/faces of valves                   | : Normal    |
| Any visual damage to the teeth of timing gears    | : None      |
| Clearance between valve guide and valve stem (mm) |             |
| - Intake valve                                    | : 0.06      |
| - Exhaust valve                                   | : 0.07      |

**16.2 Clutch:**

|  |          |
|--|----------|
| Any marked wear in clutch friction plate | : None   |
| Condition of clutch release bearing      | : Normal |
| Presence of water in clutch housing      | : None   |
| Condition of clutch pilot bearing        | : Normal |
| Condition of pressure plate              | : Normal |

**16.3 Transmission gears:**

All the gears of the transmission system were found in normal working condition.

**16.4 Rotary drive unit:**

The rotary drive unit was dismantled and all the components were found in normal working condition.

**17. COMMENTS & RECOMMENDATIONS**

**17.1 Engine Performance:**

- 17.1.1 The maximum power was observed as 6.22 kW under natural ambient condition against the declared value of 6.3kW.
- 17.1.2 Specific fuel consumption of engine corresponding to maximum power was recorded as 283 g/kWh against the declared value of 380g/kWh.
- 17.1.3 Back up torque of engine was observed as 5.61% against declared value of 7%. This should be looked into for corrective action.
- 17.1.4 Max. torque was observed as 22.03 Nm against the declared value of 15 Nm.

|                       |   |                                   |
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**17.2 Mechanical vibration :**

The amplitude of mechanical vibration on various assemblies of the Power Weeder was observed to the extent of 323 micron, which is on higher side. In view of the above, this should be given top priority for corrective action.

**17.3 Hardness of rotor blade :**

The hardness of rotor blades does not confirm against the requirement of  $56 \pm 3\text{HRC}$ . This maybe looked into for corrective action.

**17.4 Labeling plate :**

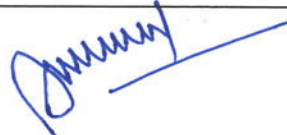


The labeling plate does not reveal all the required information. It is therefore a suitable labeling plate covering all essential components, inter alia , the following must be provided:

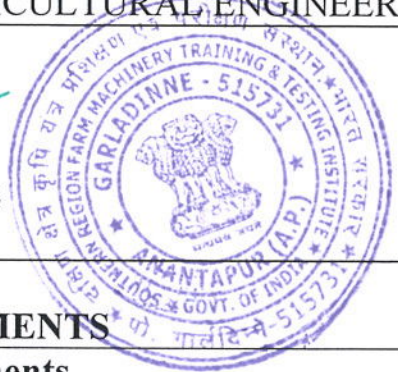
1. Specific fuel consumption (g/kWh)

**17.5 Technical literature:**

User's manual cum parts catalogue in a single booklet was not provided for reference during the test. It is recommended that same must be brought out in Hindi & other regional languages as per IS 8132:1999 (Reaffirmed 2004) for the sake of user & technical personnel in booklet form.

**TESTING AUTHORITY:**

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



**18. APPLICANT'S COMMENTS**

| Reference No. | Comments  |
|---------------|---|
| 17.2          | We shall take top priority to reduce the amplitude of mechanical vibration.                                     |
| 17.4          | We shall make the labelling plate with all required information like specific fuel consumption g/kWh.           |
| 17.5          | We shall print the User's manual cum Parts catalogue in hindi and other regional languages as per IS 1832:1999. |