

THIS REPORT IS VALID UPTO 30.06.2031



**KIRLOSKAR OIL ENGINES LTD, KIRLOSKER RW 4201
SELF PROPELLED REAPER**



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]

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



Machine-
625/1682

**KIRLOSKAR OIL ENGINES LTD, KIRLOSKER
RW 4201 SELF PROPELLED REAPER**

**COMMERCIAL
(ICT)**

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Manufacturer

: M/s. Kirloskar Oil Engines Limited,
1 st :-Laxmanrao Kirloskar Road, Khadki, Pune
411 003, Maharashtra, India.
2 nd :- Plot No.E-18, Opp -M/s Suktas India Ltd.
5 Star MIDC,KAGAL – Hatkanangale Industrial
Area, Kolhapur,416202 Maharashtra, India.

Applicant

: M/s. Kirloskar Oil Engines Limited,
Laxman Rao Kirloskar Road, Khadki, Pune-
411003, Maharashtra, India.

**KIRLOSKAR OIL ENGINES LTD, KIRLOSKAR RW 4201
SELF PROPELLED REAPER**

Report No.: Machine-625/1682

Month: July

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
Tractor Nagar, Garladinne-515 731, District: Anantapur (A.P.)
[An ISO 9001:2015 CERTIFIED INSTITUTE]**

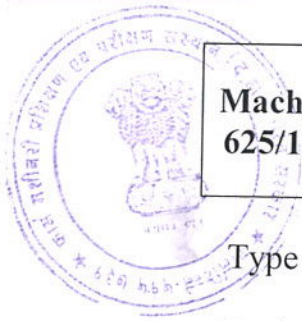
Telephone No. 08551-286441

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

E-mail: fmti-sr@nic.in

SOUTHERN REGION FARM MACHINERY TRAINING & TESTING INSTITUTE,
ANANTAPUR, (A.P.)

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Machine-
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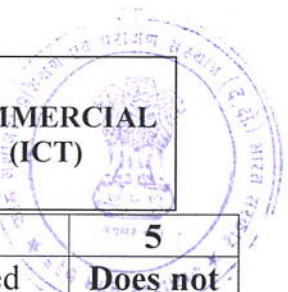
Type of test : COMMERCIAL (ICT)
Period of test : March, 2025 to June, 2024
Test Report No. : Machine-625/1682
Month / Year of release : July, 2024

- i) The results reported in this report are observed values and no corrections have been applied for atmospheric and site conditions.
- ii) The test sample was selected randomly through virtual mode by the Institute.
- 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 Reaper named "KIRLOSKAR OIL ENGINES LTD, KIRLOSKER RW 4201 SELF PROPELLED REAPER". This report is valid up to 30.06.2031, 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 Hp
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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1	2	3	4	5
19.	Slip clutch/ safety pins at cutter bar drive	Must be provided	Not provided	Does not conform
20.	Slip clutch / safety pins at conveyor drive	Must be provided	Not provided	Does not conform
21.	Provision of row marker / crop guide	Must be provided	Provided	Conforms
22	Marking /labeling of machine	The labeling plate should be riveted on the body of machine having Name and Address Of Manufactures & Applicant, Country Of Origin, Make, Model, Year Of Manufacturer, Serial Number, Engine Number, Engine HP, Rated Rpm & SFC	Engine hp, Rated rpm, Specific fuel consumption (g/kWh) are not provided	Does not conform
23	Literature	Operator manual, service manual and parts catalogue should be provided	Provided	Conforms

18. SUMMARY OF OBSERVATIONS, COMMENTS & RECOMMENDATIONS

18.1 Engine performance:

- 18.1.1 Engine maximum and rated power were observed as 5.30 kW against the declared values of 5.5 kW.
- 18.1.2 Max. Torque was observed as 18.52 Nm against declaration value of 19.85 Nm
- 18.1.3 Specific fuel consumption of engine corresponding to maximum power was recorded as 277 g/kWh. against the declaration value of 290 g/kWh
- 18.1.4 Back up torque of engine was observed as 9.71 % only. This should be looked into for corrective action.

18.2 Noise measurement:

Max. Noise at operator's ear level was observed as 97 dB (A).

18.3 Mechanical vibration:

The amplitude of mechanical vibration on various assemblies of the Power Reaper was observed to the extent of 693 microns, which is on higher side. Therefore, necessary action to reduce the vibration should be taken in future.

- 18.4 The dimension of knife does not conform, in full, to IS: 6025-1982. This should be looked into for necessary corrective action.



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18.5 Ease of operation & adjustment:

- 18.5.1 Safety guard **MUST** be provided for drive pulley & belt.
- 18.5.2 The exhaust **MUST** be provided with spark arresting device.
- 18.5.3 Safety notice & hazard warnings labels **MUST** be provided on machine.

18.6 Marking/labeling:

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

- i) Engine hp
- ii) Rated rpm
- iii) Specific fuel consumption (g/kWh)

18.7 Field performance test:

18.7.1 Rate of work and fuel consumption:

- The speed of harvesting ranged between 3.08 to 3.70 kmph for paddy crops respectively.
- The area harvested by the machine was recorded as 0.21 to 0.24 ha/h.
- The average hourly fuel consumption varied from 0.80 to 0.90 l/h for paddy crop respectively.
- The fuel consumption per unit area harvested varied from 3.33 to 4.05 l/ha for paddy crop respectively.

18.7.2 Quality of Work:

- i) The post-harvest loss was observed as 0.33 to 0.47 % for Paddy and respectively.
- ii) The stubble height was recorded as 5.84 to 9.77 mm for Paddy respectively.
- iii) Machine leaves the harvested crop in windrows.

18.8 Wear of critical components:

- i) The wear rate of cutter bar on mass basis was recorded as 0.04 % per hour.
- ii) The chemical composition of cutting (movable) blade and stationary knife are not conforming to the requirement of relevant IS (IS 6025:1982 (Reaffirmed: 1999). Therefore, this should be taken care for corrective action.

18.9 Provision for safety:




A safety pin at driven sprocket of conveyor chain is provided to take case of overloading of cutter bar.

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18.10 Technical literature:

The operator manual cum parts catalogue of reaper and engine in single booklet was supplied with the reaper for reference during the test. The manuals are no adequate. The most of initial setting and discard limit of critical components may be added in manuals and leaflets etc. It is however, recommended that same may be revised and brought out in Hindi & other regional languages as per IS 8132: 1999 (Reaffirmed: 2019) for the sake of user & technical personnel

TESTING AUTHORITY

Er. PRAMOD YADAV AGRICULTURAL ENGINEER	
Dr. B.M. NANDEDE DIRECTOR	 

19. APPLICANT COMMENTS

Sl.No	Ref. No.	Applicant Comments
1	18.1.4	We will take corrective action on this observation.
2	18.2	We will take corrective action on noise reduction.
3	18.3	We will take corrective action to meet reduce the vibration.
4	18.4	We will take corrective action to meet dimensions of Knife as per IS:6025-1982.
5	18.5.1	We will take corrective action to provide safety guard for drive pulley & belt.
6	18.5.2	We will take corrective action to provide spark arresting device.
7	18.5.3	We will take corrective action to provide required labelling on machine.
8	18.6	We will take corrective action on this observation on labelling plate.
9	18.10	We will provide the required details as required by the IS standard.