

व्यावसायिक परीक्षण रिपोर्ट
COMMERCIAL TEST REPORT

संख्या/ No.: POWER WEEDER - 173/3020/2023
माह/Month: May, 2023

THIS TEST REPORT VALID UP TO : 31st May, 2028



**ROYAL KISSAN, RK173F
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

उत्तरी क्षेत्र कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

Northern Region Farm Machinery Training and Testing Institute

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[ISO 9001:2015 CERTIFIED]

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11. RUNNING IN

The power weeder was run-in for 1.08 hours at 3200 no load engine rpm, before field performance test as recommended by the applicant. All the fasteners were checked and tightened thereafter.

12. FIELD TEST

The field tests under dry land condition were conducted for 26.63 hours. The field performance tests were conducted at 3200 no load engine rpm. In all, 5 tests trials were conducted in sandy loam soil at the NRFMTTI farm, Hisar. The result of the field test for dry land operation is summarized in table-6.

Crop parameters

- | | |
|------------------------|------------------|
| i) Type of weed | - Seasonal weeds |
| ii) Height of weed, cm | - 8.4 to 11.4 |

Table 6: SUMMARY OF FIELD PERFORMANCE TEST

Sr. No.	Parameter		Range
i)	Type of soil	:	Sandy loam
ii)	Soil moisture, %	:	8.20 to 8.50
iii)	Bulk density of soil, g/cc	:	1.26 to 1.28
iv)	Speed of operation, kmph	:	2.16 to 2.52
v)	Depth of cut, cm	:	7.83 to 8.20
vi)	Width of cut, m	:	0.99 to 1.02
vii)	Area covered, ha/h	:	0.216 to 0.240
viii)	Time required for one ha	:	4.63 to 5.88
ix)	Fuel consumption		
		l/h :	0.64 to 0.80
		l/ha :	3.10 to 4.71
x)	Weeding efficiency, %	:	87.61 to 93.06
xi)	Field efficiency, %	:	77.0 to 84.71

13. ADJUSTMENT, DEFECTS, BREAKDOWNS & REPAIR

No noticeable breakdown occurred during test.

14. COMPONENTS/ASSEMBLY INSPECTION AND ASSESSMENT OF WEAR

14.1 Engine:

The Engine and other assemblies were dismantled after 33.21 hours of engine operation.

14.1.1 Cylinder:

Cylinder bore dia. (mm)						Max. permissible wear limit
Top Position		Middle position		Bottom Position		
Thrust	Non-thrust	Thrust	Non-thrust	Thrust	Non-thrust	
73.02	73.02	73.03	73.02	73.02	73.02	73.25

16. COMMENTS & RECOMMENDATIONS

16.1 Mechanical vibration

The amplitude of mechanical vibration marked as (*) on the relevant chapter, are on drastically higher side. It is not just directly concerned with operator's health, safety and comfort, but also adversely affect the useful life of the components. In view of above, this deserved to be given top priority for corrective action.

16.2 The chemical composition of blades does not conform to the requirements of IS: 6690-1981. This needs to be looked into for corrective action.

16.3 The power of the engine is observed 3.05 kW on the engine rated rpm @3200. The backup torque of the engine is observed 1.1% only which is very less. This should be looked into for the betterment of the product.

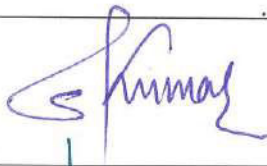

17. TECHNICAL LITERATURE

The following literatures are provided by the applicant during the test.

- i) Operator's manual
- ii) Parts catalogue
- iii) Service manual

However, the manual needs to be updated as per IS: 8132-1999.

TESTING AUTHORITY

Er. SANJAY KUMAR AGRICULTURAL ENGINEER	
Dr. MUKESH JAIN DIRECTOR	 09.05.2023

Test report is compiled by Sh. Vikram, Senior Technician.

18. APPLICANT'S COMMENTS

No specific comments received from the applicant.

