व्यावसायिक परीक्षण रिपोर्ट
COMMERCIAL TEST REPORT

संख्या/ **No.: Power Weeder – 163/2967/2023**
माह/**Month: January, 2023**

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

KISANKRAFT, KK-IC-205P
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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11. RUNNING – IN

The power weeder was run-in for 0.50 hour 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 25.18 hours. The field tests were conducted at rated speed 3600 rpm. In all, 4 tests trials were conducted in sandy loam soil at N.R.F.M.T.T.I farm, Hisar. The summary of the field test for dry land operation is given in table-4.

Crop parameters

i) Type of weed - Seasonal weeds
ii) Height of weed, cm - 10 to 22

Table 4: SUMMARY OF FIELD PERFORMANCE TEST

Sr. No.	Parameter		Range
i)	Type of soil	:	Sandy loam
ii)	Soil moisture, %	:	10.8 to 12.3
iii)	Bulk density of soil, g/cc	:	1.68 to 1.80
iv)	Speed of operation, kmph	:	1.15 to 1.20
v)	Depth of cut, cm	:	10.56 to 11.00
vi)	Width of cut, m	:	0.95 to 0.96
vii)	Area covered, ha/h	:	0.095 to 0.099
viii)	Time required for one ha	:	10.10 to 10.53
ix)	Fuel consumption		
	l/h	:	0.89 to 1.03
	l/ha	:	9.37 to 10.85
x)	Weeding efficiency, %	:	96.67 to 98.10
xi)	Field efficiency, %	:	85.16 to 87.27

13. ADJUSTMENT, DEFECTS, BREAKDOWNS & REPAIR

No noticeable defect/breakdown observed during test.

14. COMPONENTS/ASSEMBLY INSPECTION AND ASSESSMENT OF WEAR

14.1 Engine:

The engine and other assemblies were dismantled after 30.53 hours of engine operation.

14.1.1 Cylinder:

Cylinder bore dia. (mm)						
Top position		Middle position		Bottom position		Max. permissible wear limit
Thrust	Non-thrust	Thrust	Non-thrust	Thrust	Non-thrust	
70.02	70.02	70.02	70.02	70.02	70.02	70.30

8.	Material for rotor shaft	SAE 1045 (CRS) / EN8 / EN9	High carbon steel (SAE 1045)	Conforms
9.	No. of flanges	4 - 10	6	Conforms
10.	Types of flanges	Square/circular/rectangular	Square	Conforms
11.	Distance between consecutive flanges, mm	80 to 150	140	Conforms
12.	No. of blades in each flange	3-6	4	Conforms
13.	No. of rotor blade	12 (min.)	24	Conforms
14.	Thickness of rotor blade, mm	5 (min.)	5.34	Conforms
15.	Material of blade	Boron (28MnCrB5) / High carbon steel EN 42J	High carbon steel	Conforms
16.	Hardness of Blade, HRC	38 (min.)	43.9 (Average)	Conforms
17.	Shape of rotor blade	C / J shape	J shape	Conforms
18.	Provision for handle height adjustment	Must be provided	Provided	Conforms
19.	Provision for handle rotation	Must be provided	Provided	Conforms
20.	Provision for emergency stop of engine	Must be provided	Provided	Conforms
21.	Provision for easy start of engine	Must be provided	Provided	Conforms
22.	Provision for shield/cover to prevent flying of mud & stone from rotor	Must be provided	Provided	Conforms
23.	Depth control mechanism	Must be provided	Provided	Conforms
24.	Provision for transport wheels	Must be provided	Provided	Conforms
25.	Provision for cover on exhaust	Must be provided	Provided	Conforms
26.	Direction of exhaust emission away from operator	Must be provided	Provided	Conforms
27.	Marking/labeling machine	The labeling plate should be riveted on the body of machine having Name and address of manufacturer & Applicant, Country of origin, Make, Model, Year of manufacturer, Serial number, Engine number, Engine HP, rated rpm & SFC.	Provided	Conforms
28.	Literature	Operator manual, service manual and Parts catalogue should be provided.	Provided	Conforms

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 affects the useful life of the components. In view of above, this deserve to be given top priority for corrective action.

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

17. TECHNICAL LITERATURE

The following literatures were provided by the applicant.

i) Operator 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**	13.01.2023

Test report is compiled by Er. Aman Garg

18. APPLICANT'S COMMENTS

Para No.	Our Reference	Applicants comments
18.1	16.1 & 16.2	We will take the corrective action against the same.