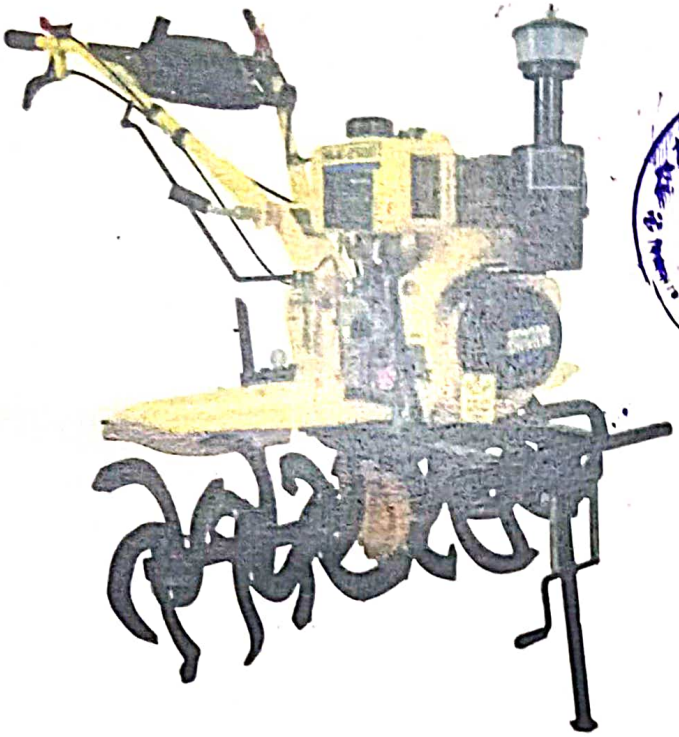
व्यावसायिक परीक्षण रिपोर्ट (प्रारंभिक)
COMMERCIAL TEST REPORT (Initial)

संख्या/No.: Machine 59/427
माह / Month: March 2022

THIS TEST REPORT IS VALID UPTO 31.03.2027



KISANKRAFT, KK-IC-250D
POWER WEEDER

सत्यमेव जयते
भारत सरकार
GOVT OF INDIA
कृषि एवं किसान कल्याण मंत्रालय
MINISTRY OF AGRICULTURE & FARMERS WELFARE
कृषि, सहकारिता एवं किसान कल्याण विभाग
DEPARTMENT OF AGRICULTURE, COOPERATION & FARMERS WELFARE

उत्तर पूर्वी क्षेत्र कृषि यंत्र प्रशिक्षण एवं परीक्षण संस्थान
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4. SPECIFICATION

4.1 General:

Make	:	KISANKRAFT
Model	:	KK-IC-250D
Name and address of manufacturer	:	**M/s KisanKraft Limited Sri Huchhanna Tower, No. 4, 1st Main 7-A Cross, Maruthi Layout, Dasarahalli, HAF Post, Hebbal, Bangalore - 560024**
Name and address of applicant	:	**M/s KisanKraft Limited Sri Huchhanna Tower, No. 4, 1st Main 7-A Cross, Maruthi Layout, Dasarahalli, HAF Post, Hebbal, Bangalore - 560024**
Name of machine	:	Power Weeder
Type of machine	:	Self-propelled, Walk behind
Country of origin	:	India
Year of manufacture	:	2021
Serial no. of machine	:	KK210418WM1044

4.2 Details of prime mover:

Name and address of the manufacturer	:	M/s KisanKraft Limited Sri Huchhanna Tower, No. 4, 1st Main 7-A Cross, Maruthi Layout, Dasarahalli, HAF Post, Hebbal, Bangalore - 560024
Make	:	KISANKRAFT
Model	:	173FDTACO3A
Type	:	4 stroke, Single cylinder, Air cooled
Year of manufacture	:	2020
Serial Number	:	KK210418WM1044
Country of origin	:	India
Recommended high idle speed (rpm)	:	3800 ± 50
Recommended low idle speed (rpm)	:	1400 ± 50
Recommended rated speed (rpm)	:	3600
Recommended speed for field test (rpm)	:	3600
Speed at maximum torque, (rpm) **(apa)**	:	3000

11. HARDNESS AND CHEMICAL COMPOSITION

11.1 Hardness of rotor blades :

The surface hardness of blade was recorded as under :

	As per IS 6690:1981 (Reaffirmed 2012)	As observed (HRC)	Remarks
At shank portion	37 to 45 HRC	50.3	Does not conform
At Edge Portion	56 ± 3	49.4	Does not conform

11.2 Chemical composition of rotor blades :

Constituents	As per IS 6690:1981 (Reaffirmed 2012)	Composition as observed (% by weight)	Remarks
	Silicon Manganese Steel (%)		
Carbon (C)	0.50-0.60	0.780	Does not conform
Silicon (Si)	1.50-2.00	0.706	Does not conform
Manganese (Mn)	0.50-1.00	0.954	Conforms
Sulphur (S)	0.05(max)	0.010	Conforms
Phosphorous (P)	0.05(max)	0.028	Conforms

12. FIELD PERFORMANCE TEST

The field tests were conducted for 25.84 hours of field operation for testing the said Power Weeder. The field tests were conducted at rated engine rpm of 3600. The detailed test results are represented in the Annexure and summarized in the ensuing table:

Sl .No.	Parameters		Observations
1	Type of soil	:	Light
2	Av. Soil moisture (%)	:	8.1 to 13.6
3	Av. Bulk density of soil (g/cc)	:	1.34 to 1.60
4	Av. Forward Speed of operation (kmph)	:	2.10 to 2.50
5	Av. Depth of cut (cm)	:	5.5 to 6.33
6	Av. Width of cut (m)	:	0.875 to 0.90
7	Area covered (ha/h)	:	0.1590 to 0.1813
8	Time required for one ha (h)	:	5.51 to 6.28
9	Field efficiency (%)	:	79.25 to 88.13
10	Weeding efficiency (%)	:	73.68 to 83.80
11	Fuel consumption		
	l/h	:	0.590 to 0.641
	l/ha	:	3.53 to 3.70

12.1 Rate of work:

- Rate of work was recorded as 0.1590 to 0.1813 ha/h and the forward speed of operation vary from 2.10 to 2.50 kmph.
- Time required to cover one hectare was recorded as 5.51 to 6.28 h.

12.2 Quality of work:

- Depth of cut was recorded as 5.5 to 6.33 cm.
- Av. Working width was observed as 0.875 to 0.90 m.
- Field efficiency was found as 79.25 to 88.13 %.
- Weeding efficiency was found as 73.68 to 83.80 %

12.3 Adequacy of power of prime mover:

The power of prime mover as used during test was found adequate.

15.1.5 Big end bearing

Bearing no.	Dia of bearing (mm)	Dia of Crank pin (mm)	Clearance (mm)		Max. Permmissible wear limit (mm)	
			Dimentrical	Axial	Dimentrical	Axial
1	32.08	31.94	0.14	0.25	0.25	1.0

Condition of bearing: Normal

15.1.6 Main bearing: One ball bearing 6306 were used

Bearing No.	Diametrical clearance, (mm)	Crankshaft end float, (mm)	Max. permissible clearance limit,(mm)	
			Diametrical clearance	Crankshaft end float
Bush Bearing	0.06	0.09	NA	NA

15.1.7 Valve guide clearance

Valve guide diameter (mm)		Valve stem diameter (mm)		Valve guide clearance (mm)		Max. Permissible wear limit (mm)	
Inlet	Exhaust	Inlet	Exhaust	Inlet	Exhaust	Inlet	Exhaust
5.45	5.44	5.42	5.42	0.03	0.02	Not specified	Not specified

Valve, guide and timing gear:-

Any marked sign of overheating of valves	:	None
Pitting of seat/faces of valves	:	Normal
Any visual damage of teeth of timing gears	:	None
Condition of ingnition coil & magneto	:	Normal

15.2 Clutch:
No noticeable defects observed

15.3 Transmission gears:

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

16. COMMENTS & RECOMMENDATIONS

16.1 Maximum power of the engine has been observed as 3.97 kW as against declaration of 3.80 kW.

16.2 Rated power of the engine has been observed as 2.26 kW as against declaration of 3.6 kW. This may be looked into for corrective action.

16.3 Specific fuel consumption of engine at max. Power in 2 hours maximum power test was observed 0.358 kg/kWh against 0.300 kg/kWh of that declared by the applicant/manufacturer. It must be looked into.

16.4 Back up torque of the engine as observed during the test 4.28% against 10% of that declared by the applicant/manufacturer. It must be looked into.

16.5 The amplitude of mechanical vibration marked as (*) is on drastically higher side and is directly concerned with operator's health, safety and comfort. Besides, it is also adversely affect the useful life of the component in view of above this deserves to be given top priority for corrective action

16.6 Noise at operator's ear level was observed on higher side against warning limit of 85 dB (A) as specified by ILO for continuous exposure of 8 hours per day. **This calls for reduction in noise level to improve the operator's comfort & safety.**

16.7 During oil pull over test percentage loss of oil was observed on higher side. It should be looked into corrective action.

16.8 Working width has been mentioned as 118 cm on labeling plate of the machine. However, during field tests it was observed as 88 to 90 cm. This shall be looked into for corrective action.

16.9 Working depth has been mentioned as ≥10 cm on labeling plate of the machine. However, during field tests it was observed as 5.5 to 6.33 cm. This shall be looked into for corrective action.

16.10 The hardness and chemical composition of rotary blades does not conform to the requirement of IS 6690:1981 (Reaffirmed 2012). This may be looked into for corrective action.

16.11 Technical literature:

Operator's manual, service manual and parts catalogue of the machine was supplied with the test sample. It must be provided in Hindi & other regional languages as per IS 8132:1999 (Reaffirmed 2004) for the sake of user & technical personnel

TESTING AUTHORITY

(S.G.PAWAR)
AGRICULTURAL ENGINEER

(J.P. MANDAL)
SENIOR AGRICULTURAL ENGINEER

(K.K. NAGLE)
DIRECTOR

Draft test report compiled by - **Shri Khagendra Bora**
Sr. Technical Assistant

17. APPLICANTS COMMENT'S

Para No	Our Reference	Applicants Comments
17.1	16.1 to 16.11	We will take corrective action against the same.