



THIS TEST REPORT IS VALID UPTO 31.03.2027



KISANKRAFT POWER WEEDER
Model: KK-IC-256D



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 पूर्व क्षेत्र कृषि यंत्र परीक्षण एवं प्रशिक्षण संस्थान

NORTH EASTERN REGION FARM MACHINERY TRAINING & TESTING INSTITUTE

बिश्वनाथ चरियाली: बिश्वनाथ: असम, पिन-784 176

BISWANATH CHARIALI: BISWANATH: ASSAM, PIN - 784 176

[AN ISO 9001:2015 CERTIFIED INSTITUTION]

Ph. No. 03715-222094

Website: <http://nerfmtti.nic.in>

Fax No: 03715-230358

E-Mail: fmti-ner@nic.in

Machine 60/428	KISANKRAFT POWER WEEDER Model: KK-IC-256D	COMMERCIAL (ICT)
---------------------------	--	-------------------------

1. SCOPE OF TEST

The scope of test was limited to check and assess the following:

- 1.1 Specification and other data furnished by the applicant
- 1.2 Engine performance test
- 1.3 Amplitude of mechanical vibration
- 1.4 Noise measurement
- 1.5 Air cleaner oil pullover
- 1.6 Hardness & chemical composition of rotor blades
- 1.7 Field performance
- 1.8 Wear analysis of rotor blades
- 1.9 Ease of operation and adjustments
- 1.10 Defects, breakdowns and repairs



2. METHOD OF SELECTION

The test sample was directly submitted by the applicant for testing. Hence, method of selection was not known.

3. TEST CODE/TEST PROCEDURE

There is no Indian standard/test code available for testing of self propelled power weeder as such. The guidelines, however, have been taken from the following:

- IS 9935 : 2002 : Power Tiller - Test code
(Reaffirmed 2012)
- IS 12036:1995 : Agricultural tractors-test procedures-Power tests for
(Reaffirmed 2004) power take-off
- IS 9980 : 1999 : Guidelines for field performance and haulage tests
(Reaffirmed 2004) of power tillers
- IS 1976 : 1976 : Specification for Rotary paddy weeder, manually
(Reaffirmed 2009) operated
- IS 6690 : 1981 : Specification for Blades for Rotavator for Power
(Reaffirmed 2012) Tillers

4. SPECIFICATIONS

- 4.1 General:**
- Make : KISANKRAFT
 - Model : KK-IC-256D
 - Name and address of manufacturer : Weima Agricultural Machinery Co., Ltd.
Area B, Luohuang Industry, Jiangjin,
District- Chongqing, CHINA
 - Name and address of applicant : KISANKRAFT LIMITED
Sri Huchhanna Tower #4, 1st Main, 7-A, Cross,
Maruthi Layout, Dasarahalli, HAF Post, Hebbal,
Bengaluru, Karnataka, India- 560024
 - Name of machine : Power weeder
 - Type of machine : Self propelled, Walk behind
 - Working size of machine, (mm) : 620



Machine 60/428	KISANKRAFT POWER WEEDER Model: KK-IC-256D	COMMERCIAL (ICT)
-------------------	--	------------------

Year of manufacture : 2020
 Serial no. of machine : KK201106WM016

4.2 Details of prime mover:

Name and address of manufacturer : Weima Agricultural Machinery Co., Ltd.
 Area B, Luohuang Industry, Jiangjin,
 District- Chongqing, CHINA

Model : KK-DEV-173F
 Type : Single cylinder, four stroke, air cooled, vertical,
 compression ignition engine.

Year of manufacture : 2020
 Serial No. : KK201106WM061
 Recommended high idle speed, rpm : 3800
 (apa)
 Recommended low idle speed, rpm : 1400 ± 50
 (apa)
 Recommended rated speed, rpm : 3600
 (apa)
 Recommended rated speed for field
 operation, rpm (apa) : 3600
 Max. power observed, kW : 4.00 @ 3400 rpm
 Country of origin : China

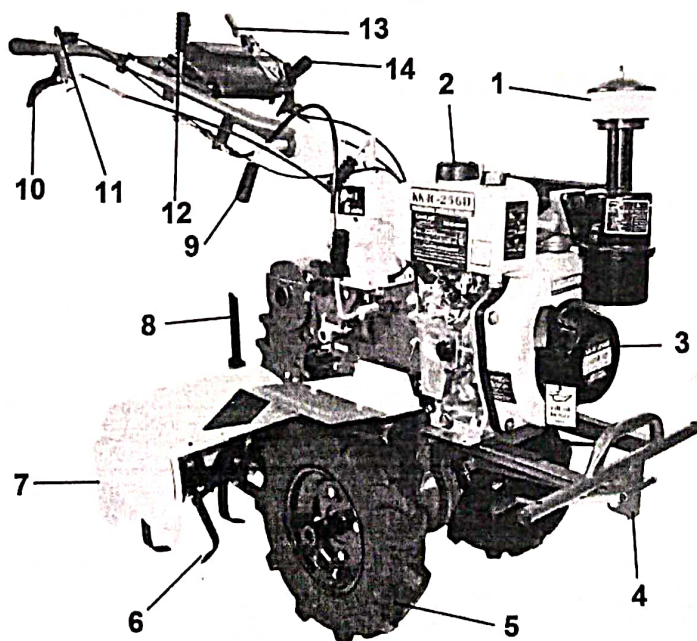


Fig.1 KISANKRAFT Power Weeder, KK-IC-256D

- | | |
|-------------------------|----------------------------------|
| 1. Air cleaner assembly | 9. Handle height adjusting lever |
| 2. Fuel tank | 10. Reverse gear engaging lever |
| 3. Recoil starter | 11. Accelerator lever |
| 4. Stand | 12. Main gear engaging lever |
| 5. Transport wheel | 13. Clutch lever |
| 6. Rotor blade | 14. PTO engaging lever |
| 7. Rotor cover | |
| 8. Depth adjusting bar | |

Machine 60/428	KISANKRAFT POWER WEEDER Model: KK-IC-256D	COMMERCIAL (ICT)
-------------------	--	------------------

11.2 Chemical composition of rotor blades :

The material of rotary blade was got analyzed from Geological and Metallurgical Laboratories, Bangalore for chemical composition. The results of chemical analysis test results are as under:

Constituents	As per IS 6690:1981 (Reaffirmed 2012)		Composition as observed (% of weight)	Remarks
	Carbon Steel (%)	Silico Manganese Steel (%)		
Carbon (C)	0.70 -0.85	0.50-0.60	0.550	Conforms
Silicon (Si)	0.10 -0.40	1.50-2.00	0.265	Conforms
Manganese (Mn)	0.50 -1.0	0.50-1.00	1.063	Does not conform
Sulphur (S)	0.05 (max)	0.05 (max)	0.008	Conforms
Phosphorous (P)	0.05 (max)	0.05 (max)	0.012	Conforms

12. FIELD PERFORMANCE TEST

The field tests were conducted for 25.50 hours of field operation for testing the said Power Weeder. The field tests were conducted at rated rpm. 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	Soil moisture (%)	: 6.1 to 10.1
3	Bulk density of soil (g/cc)	: 1.52 to 1.63
4	Speed of operation (kmph)	: 1.64 to 2.28
5	Depth of cut (cm)	: 4.16 to 5.64
6	Width of cut (m)	: 0.614 to 0.627
7	Area covered (ha/h)	: 0.089 to 0.117
8	Time required for one ha (h)	: 8.55 to 11.24
9	Field efficiency (%)	: 82.39 to 87.79
10	Weeding efficiency (%)	: 76.15 to 80.79
11	Fuel consumption	- l/h : 0.657 to 0.733
		- l/ha : 5.70 to 8.24

12.1 Rate of work

- Av. rate of work was recorded as 8.55 to 11.24 ha/h and the speed of operation varied from 1.64 to 2.28 kmph.
- Av. time required to cover one hectare was recorded as 8.55 to 11.24 hours.

12.2 Quality of work

- Depth of cut was recorded as 4.16 to 5.64 cm.
- Working width was observed as 0.614 to 0.627 m.
- Field efficiency was found as 82.39 to 87.79 %.
- Weeding efficiency was found as 76.15 to 80.79 %.

Machine 60/428	KISANKRAFT POWER WEEDER Model: KK-IC-256D	COMMERCIAL (ICT)
-------------------	---	------------------

Valve guide clearance:

Valve guide dia (mm)		Valve stem dia (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, 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
15.2	Clutch:	
	Any marked wear in clutch friction plate	: No
	Condition of clutch release bearing.	: Normal
	Condition of pilot bearing	: Normal
	Condition of pressure plate	: Normal
15.3	Transmission gears:	
	All the gears of the transmission system were found in normal working condition.	
15.4	Rotary drive unit:	
	The rotary drive unit was dismantled and all the components were found in normal working condition.	



16. COMMENTS & RECOMMENDATIONS

- 16.1 Specific fuel consumption of engine corresponding to maximum power as observed during test was 281.8 g/kWh against the declared value of 300 g/kWh.
- 16.2 The maximum power and rated power of engine were observed as 4.0 kW and 3.0 kW, respectively against declared values of 3.8 kW and 3.6 kW, respectively. This shall be looked into for corrective action.
- 16.3 The maximum torque was observed as 11.52 N-m against the declared value of 10.5 N-m.
- 16.4 The back-up torque was observed as 2.58 % against the declared value of 10 %. This shall be looked into for corrective action.
- 16.5 It was observed during field test that middle portion of the working width of the machine remains untilld and hence double pass is necessary.

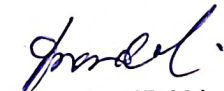
Machine 60/428	KISANKRAFT POWER WEEDER Model: KK-IC-256D	COMMERCIAL (ICT)
-------------------	---	-------------------------

- 16.6 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 machine components. In view of the above, it should be looked into for corrective action.
- 16.7 Noise at operator's ear level was observed as 91.2 dB (A) which is on higher side of danger limit of 90 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.
- 16.8 Machine maneuverability while taking turns during field operation was not comfortable. It shall be looked into to improve ease of operation for the operator.
- 16.9 Though the machine has been imported from China, on labeling plate of machine, the country of origin has been mentioned as India. This shall be looked into for corrective action.
- 16.10 Rated power has been mentioned as 3.6 kW on labeling plate of the machine. However, during engine test it was observed as 3.0 kW. This shall be looked into for corrective action.
- 16.11 Working width has been mentioned as 118 cm on labeling plate of the machine. However, during field tests it was observed as 62 cm. This shall be looked into for corrective action.
- 16.12 Working depth has been mentioned as ≥ 10 cm on labeling plate of the machine. However, during field tests it was observed as 4.16 to 5.64 cm. This shall be looked into for corrective action.
- 16.13 The chemical composition of rotary blade with respect to Manganese does not conform to the requirement of IS 6690:1981 (Reaffirmed 2012). This may be looked into for corrective action.
- 16.14 The hardness of rotary blades does not conform to the requirement of IS 6690:1981 (Reaffirmed 2012). This shall be looked into for improvement.
- 16.15 **Technical literature:**
Operator's manual, service manual and parts catalogue of the machine was supplied with the test sample for reference during the test. It is however, recommended that same may be revised and brought out in Hindi & other regional languages as per IS 8132:1999 (Reaffirmed 2004) for the sake of user & technical personnel.

TESTING AUTHORITY


(M.R. PATIL)

AGRICULTURAL ENGINEER


(J.P. MANDAL)
SENIOR AGRICULTURAL ENGINEER
(Testing Incharge)


(K.K. NAGLE)
DIRECTOR