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

स्वच्छ भारत
एक कदम स्वच्छता की ओर

संख्या/No.: Machine 67/438
माह / Month: August 2022

THIS TEST REPORT IS VALID UPTO 31.08.2027

KK-SBC- 4302 KISANKRAFT BRUSH CUTTER

सत्यमेव जयते

भारत सरकार
GOVT OF INDIA
कृषि एवं किसान कल्याण मंत्रालय
MINISTRY OF AGRICULTURE & FARMERS WELFARE
कृषि एवं किसान कल्याण विभाग
DEPARTMENT OF AGRICULTURE AND FARMERS WELFARE

उत्तर पूर्वी क्षेत्र कृषि यंत्र प्रशिक्षण एवं परीक्षण संस्थान

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1. SCOPE OF TEST

1.1 LABORATORY TEST

a) Checking of specifications
b) Mechanical vibration measurement
c) Noise measurement
d) Wear assessment of critical components
e) Engine performance test

1.2 FIELD TEST

a) Rate of work
b) Quality of work
c) Labour requirement
d) Adequacy of prime mover power
e) Ease of operation, adjustment & safety provisions
f) Defects, breakdowns and repairs

2. METHOD OF SELECTION

As per Govt. of India, OM No. 13-1/2021-M&T (I&P), dated 03.02.2022, the random selection was exempted. Hence, the machine was directly submitted by the applicant at this Institute for test.

3. TEST CODE AND PROCEDURE

There is no Indian Standard Test Code available for testing of brush cutter as such. However, engine performance test, IS 7347-1974 was referred.

4. SPECIFICATIONS

4.1 General

Name of the Machine	:	Brush Cutter
Name and address of the manufacturer	:	**M/s Shandong Huasheng Pesticides Machinery CO. Ltd., China**
Name & Address of Applicant	:	**M/s KisanKraft Limited,** Sri Huchhanna Tower, No. 4, 1st Main, 7-A Cross, Muruthi Layout, Dasarahalli, HAF Post, Hebbal, Bengaluru, Karnataka, India-560024
Model	:	KK-SBC-4302

Serial No.	:	**Not Provided**
Type	:	Shoulder Mounted Engine operated
Type of cutting attachment	:	Nylon rope & 3-T blade
Year of manufacture	:	**Not Specified**
Country of origin	:	**CHINA**
Type of crops/bush recommended	:	All kinds of weeds.

4.2 Constructional details :

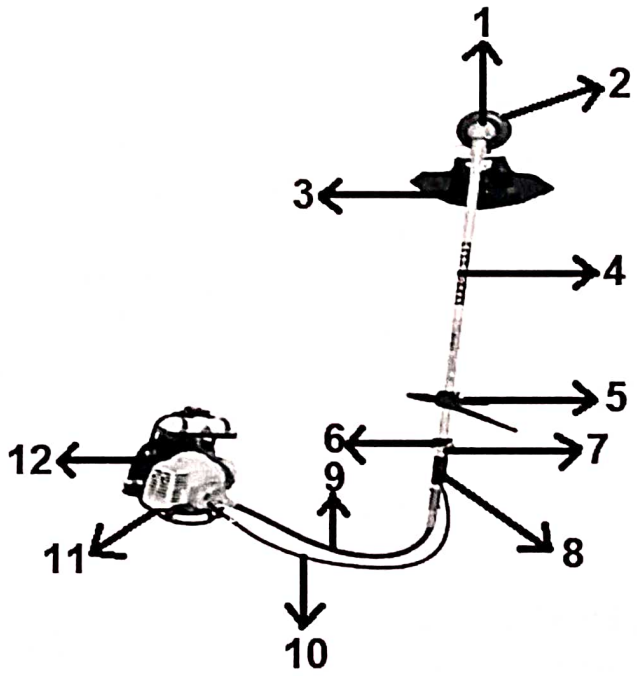

Fig. 1: KISANKRAFT BRUSH CUTTER, MODEL: KK-SBC-4302

Keywords:

1. Gear case
2. Nylon rope cutting attachment
3. Deflector
4. Transmission cover pipe
5. Handle grip
6. Engine stopping switch
7. Throttle cum clutch trigger
8. Handle grip
9. Accelerator cable
10. Flexible drive shaft cover
11. Engine mounting stand
12. Cushion for operator's back

10.2 Chemical composition of 3-T blade:

The results of chemical analysis test of 3-T blade

Constituents	As per IS: 6025 – 1982 (%)	Composition As observed (% by weight)	Remarks
Carbon (C)	0.70 to 0.95	0.433	**Does not Conform**
Manganese (Mn)	0.3 to 0.5	0.782	**Does not Conform**
Silicon (Si)	-----	0.250	N.A.
Sulphur (S)	-----	0.008	N.A.
Phosphorous (P)	-----	0.016	N.A.

11. WEAR ANALYSIS OF CRITICAL COMPONENTS

Component	Duration of operation (h)	Initial mass (g)	Mass after operation (g)	Loss of mass (g)	Percentage of wear	Percentage of wear on hourly basis
3-T blade	10.28	322.74	320.0	2.74	0.85	0.08

12. FIELD PERFORMANCE TEST

Field tests were conducted for total of 26.32 hours duration. Grass/weeds cutting with nylon rope and bush cutting using 3-T blade attachments were carried out for 16.04 hours and 10.28 hours, respectively. A total of five test trials were conducted at rated speed of 6500 ± 100 rpm. Detailed results of field tests are shown in ANNEXURE-I & III and summarized in the ensuing table. Details of the operator have been given in ANNEXURE-III.

SUMMARY OF FIELD PERFORMANCE TEST

Sl. No.	Parameters	Bush cutting	Grass/weeds cutting
1	Field Condition	Level	
2	Thickness of Grasses/Bush (mm)	8.70 to 9.48	1.45 to 2.34
3	Average number of weeds in 1m²	15.0 to 22.0	164 to 284
4	Average height of Grasses/Bush (mm)	1088 to 1777.4	156 to 279
5	Mass of Grass/Bush cut (kg/h)	321.97 to 407.86	123.56 to 257.20
6	Mass of Grass/Bush cut (kg/ha)	9524 to 10376	4662 to 10072
7	Rate of work (ha/h)	0.034 to 0.039	0.026 to 0.027
8	Time required for one hectare (h)	25.44 to 29.58	37.31 to 39.16
9	Fuel consumption		
	-l/h	0.769 to 0.836	0.748 to 0.812
	-l/ha	21.27 to 22.75	29.29 to 30.87

15.2 Transmission system:
All the gears of the transmission system were found in normal condition.

16. COMMENTS & RECOMMENDATIONS

16.1 The average rated power in rating test of engine was observed as 0.6 kW against declared value of 1.25 kW by the manufacturer. This should be looked into for corrective action.

16.2 The specific fuel consumption (SFC) in rating test of engine was observed as 1307.9 g/kWh against declared value of ≤ 610 g/kWh by the manufacturer. This should be looked into for corrective action.

16.3 Noise at operator's ear level was observed on higher side against danger limits 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 operational comfort and safety.

16.4 The amplitude of mechanical vibration at various assemblies viz. steering handle, engine cover and drive shaft cover pipe was on higher side. This calls for dampening down of vibration to improve the operational comfort and service life of the components.

16.5 The Hardness & Chemical composition of 3-T blade does not conform to Indian Standard IS 6025:1982. This should be looked into for corrective action.

16.6 The mentioned value of rated power of engine on the labeling sticker of the machine was not matching with the observed value during engine test. This may be looked into.

16.7 **As a safety wear only goggles (safety glass) were provided with the machine. The applicant has strictly advised to provide the safety kit viz. helmet, hand gloves, ear plug, mask, safety shoes etc. along with each machine for the safety of operator.**

16.8 The name of the machine has been mentioned wrongly on the labeling sticker of the machine. This should be looked into for corrective action.

16.9 The engine was not marked with Manufacturer name or trade-mark, Serial No of engine, Rated power, Rated speed, and type of fuel used which does not fulfill the requirement of IS 7347-1974 (Amended 2011). This may be looked into.

16.10 Adequacy of Literature

The following literature in English language was provided for reference during testing:

- Operator's/ Service manual
- Parts catalogue

It is recommended to bring out the manual in Hindi and other vernacular languages as per IS: 8132-1999.

TESTING AUTHORITY

(M.R. PATIL)
AGRICULTURAL ENGINEER

(S.G. PAWAR)
AGRICULTURAL ENGINEER

(Dr. P.P. RAO)
DIRECTOR

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

17. APPLICANT'S COMMENTS

Sl. No.	Clause No.	Applicants Comments
01.	16.1 to 16.10	We will take corrective action against the same.