

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



संख्या/No.: Machine 139/513
माह / Month: December 2024

THIS TEST REPORT IS VALID UPTO 30.12.2031



KASHI, KBC GX35P, BRUSH CUTTER



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

उत्तर पूर्वी क्षेत्र कृषि यंत्र प्रशिक्षण एवं परीक्षण संस्थान

NORTH EASTERN REGION FARM MACHINERY TRAINING & TESTING INSTITUTE

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Machine 139/513	KASHI, KBC GX35P BRUSH CUTTER	COMMERCIAL (INITIAL)
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Name and Address of Applicant : M/s SB Agro, 204 SDS Chambers,
Bhaistan Road, Raipur, Chattisgarh -
492001

Make : KASHI

Model : KBC GX35P

Serial No. : 240505107

Type : Engine operated

Type of cutting attachment : Nylon rope and circular blade

Year of manufacture : 2024

Country of origin : CHINA

Type of crops/bush recommended : All kinds of weeds/bushes

4.2 Constructional details:



Fig. 1: BRUSH CUTTER, MODEL:KBC GX35P

Keywords:

- | | |
|----------------------------|----------------------------------|
| 1. Fuel tank | 6. RHS handle |
| 2. LHS handle | 7. Throttle cum clutch trigger |
| 3. Transmission cover pipe | 8. Engine stopping switch |
| 4. Deflector | 9. Connection for shoulder strap |
| 5. Gear case | 10. Engine |

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SUMMARY OF FIELD PERFORMANCE TEST

Sl. No.	Parameters	Grass/weeds cutting with nylon rope	Bush cutting with circular blade
1	Field Condition	Level	
2	Thickness of stem of Grasses/Bush at cutting height (mm)	2.0 to 4.3	10.7 to 12.8
3	Number of Grass/Bush per m ²	184 to 446	221 to 322
4	Height of Grasses/Bush (mm)	516 to 1570	1600 to 2000
5	Mass of Grass/Bush cut (kg/h)	89.1 to 212.2	493.7 to 724.1
6	Mass of Grass/Bush cut (kg/ha)	3300 to 7800	12100 to 14200
7	Rate of work (ha/h)	0.020 to 0.027	0.041 to 0.051
8	Time required for one hectare (h)	36.8 to 51.3	19.6 to 24.5
9	Fuel consumption:		
	-l/h	0.47 to 0.55	0.54 to 0.60
	-l/ha	17.28 to 28.20	11.77 to 13.24

12.1 Grass/Weeds cutting using nylon rope:

12.1.1 Rate of work:

The area of cut was recorded as 0.020 to 0.027 ha/h.

Time required for one hectare was recorded as 36.8 to 51.3 hours.

Mass of weeds cut was 89.1 to 212.2 kg/h.

12.1.2 Fuel consumption:

Fuel consumption was observed as 0.47 to 0.55 l/h and 17.28 to 28.20 l/ha.

12.2 Bush cutting using circular blade:

12.2.1 Rate of work:

The area of cut was recorded as 0.041 to 0.051 ha/h.

Time required for one hectare was recorded as 19.6 to 24.5 hours.

Mass of weeds cut was 493.7 to 724.1 kg/h.

12.2.2 Fuel consumption:

Fuel consumption was observed as 0.54 to 0.60 l/h and 11.77 to 13.24 l/ha.



13. EASE OF OPERATION AND ADJUSTMENTS

No difficulties were observed in operation and adjustment during the field test.

14. DEFECTS, BREAKDOWNS AND REPAIRS

No noticeable defect or breakdown was observed during test.

15. COMPONENTS/ASSEMBLY INSPECTION

The Engine was dismantled after 35.56 hours of operation.

15.1 Engine:**Cylinder bore:**

Cylinder bore dia., mm						Max. permissible wear limit, mm
Top position		Middle position		Bottom position		
Thrust side	Non-thrust side	Thrust side	Non-thrust side	Thrust side	Non-thrust side	
39.02	39.01	39.02	39.01	39.01	39.01	39.30

Piston:

Piston dia., mm				Clearance between piston & cylinder liner at the skirt of the piston, mm	Maximum permissible clearance limit, mm
Top (above top compression ring)		At skirt			
Thrust side	Non-thrust side	Thrust side	Non-thrust side		
38.70	38.71	38.96	*	Not specified	38.30

*Not recorded due to piston design constraints

Ring end gap:

Rings	Ring end gap, mm			Max. permissible end gap limit, mm
	Top	Middle	Bottom	
1 st comp. ring	0.20	0.20	0.15	1.0
2 nd comp. ring	0.15	0.15	0.15	
Oil ring	NA	NA	NA	

Ring side clearance:

Rings	Ring side clearance, mm	Max. permissible clearance limit, mm
1 st comp. ring	0.03	0.30
2 nd comp. ring	0.03	
Oil ring	*	

*Not recorded due to ring design constraints

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Main bearings: 6202-1Nos.

Bearing No.	Type of bearing	Diametrical clearance, mm	Crankshaft end float, mm	Max. permissible clearance limit, mm	
				Diametrical clearance	Crankshaft end float
1	Ball bearing	NA	0.005	NA	0.2 (adjustable with gasket)
2	Ball bearing	NA			

Big end bearing:

Bearing No.	Clearance, mm		Max. permissible clearance limit, mm	
	Diametrical	Axial	Diametrical	Axial
1	Needle bearing	NR	0.15	0.70

Measurement of big end bearing clearance was not possible as the piston along with connecting rod was not detachable.

15.2 Valve, guide and timing gear:

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



Transmission system:

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

16. CRITICAL TECHNICAL SPECIFICATIONS

(Vide Ministry's letter No. 13-9/2019-(M&T) (I&P)-Part dated 26.04.2019)


Sl. No.	Parameters	Specifications	Observation	Remarks
1	2	3	4	5
1	Type	Self-propelled, portable	Self-propelled, portable	Conforms
2	Type of cutting attachment	Circular disc / Straight blade / nylon rope	Circular disc / nylon rope	Conforms
Circular blade				
3	Material of circular/straight blade	Alloy steel	Alloy steel	Conforms
4	No. of teeth on circular disc blade	50 - 100	40	Conforms
5	Root diameter / Overall diameter (mm)	200 - 270	252.1	Conforms
6	Thickness of disc (mm)	1.5 Min.	1.0	Does not conform

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1	2	3	4	5
7	Teeth thickness (mm)	2.0 Min.	2.2	Conforms
8	Hardness of blade, HRC	68 - 70	15	Does not conform
Straight blade				
9	Diameter of straight blade(mm)	250 - 350	NA	--
10	Width at ends /at center (mm)	50 / 70, Min.	NA	--
11	Thickness of straight blade(mm)	1.5 Min.	NA	--
Nylon rope				
12	Length of nylon rope(mm)	2000 - 4000	2000	Conforms
13	Diameter of nylon rope(mm)	2.5 to 4.0	2.9	Conforms
14	Type of engine	Compression ignition / Spark ignition	Spark ignition	Conforms
15	Starting method	Manual / recoil / self-starting	Recoil starting	Conforms
16	Type of clutch	Cone / centrifugal	Centrifugal	Conforms
17	Type of gear drive	Bevel pinion	Bevel pinion	Conforms
18	Capacity of fuel tank (l)	1.0 (Min.)	0.7	Does not conform
19	On /Off provision in fuel Supply system	Must be provided	Not provided	Does not conform
20	Provision for easy start of engine	Must be provided	Provided	Conforms
21	Provision for emergency stop of engine	Must be provided	Provided	Conforms
22	Provision for shield / cover to prevent flying of mud & stone from rotor	Must be provided	NA	--
23	Provision for Grass deflector at the rear of the cutting mechanism	Must be provided	Provided	Conforms
24	Provision for Pad with shoulder belt to dampen the vibration	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



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1	2	3	4	5
27	Provision for safety kit (helmet, earplug, mask, hand gloves, safety protective cloth, safety shoes)	Must be provided	Provided except helmet, ear plug, mask and protective cloth.	Does not conform
28	Marking /labeling of 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.	Only Make, Model and Serial Number was mentioned on the labeling sticker. Instead of labeling plate, a sticker was pasted on the machine.	Does not conform
29	Literature	Operator manual, Service manual and Parts catalogue should be provided.	Provided	Conforms

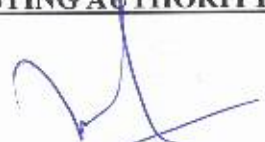
17. COMMENTS AND RECOMMENDATIONS

- 17.1 The average rated power in rating test of engine was observed as 0.62 kW against declared value of 1.2 kW by the applicant/manufacturer. This should be looked into for corrective action.
- 17.2 The engine was not marked with Manufacturer name or trade-mark, Rated power, Rated speed and type of fuel used which does not fulfill the requirement of IS 7347-1974 (Amended 2021). This should be looked into.
- 17.3 The labeling plate should be riveted on the body of machine having name and address of the manufacturer, Country of origin, Make, Model, Year of manufacture, Serial number, Engine number, Engine HP, rated rpm and SFC. This should be looked into.
- 17.4 Noise at operator's ear level was observed on higher side against danger limit of 90 dB(A) as specified by International Labour Organization (ILO) for continuous exposure of 8 hours per day. This calls for reduction in noise level to improve the operational comfort and safety of operator.
- 17.5 The amplitude of mechanical vibration at various assemblies viz. steering handle (with nylon rope attachment), 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.

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- 17.6 The hardness and chemical composition of straight blade and circular blade does not conform to Indian Standard IS 6025:1982. This should be looked into for corrective action.
- 17.7 As a safety wear, hand gloves and safety shoes were provided with the machine. The applicant is strictly advised to provide the entire safety kit including helmet, mask, ear plug, protective cloth etc. along with each machine for the safety of operator.
- 17.8 **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: 8132-2023.

TESTING AUTHORITY



(M.R. PATIL)

SENIOR AGRICULTURAL ENGINEER




(P. KAMALABAI)
DIRECTOR

Draft test report compiled by - **Shri Vithato Keyho, Sr. Technical Assistant**

18. APPLICANT'S COMMENTS

Applicant's Comments

We have noticed all comments and we will take necessary action in future production.