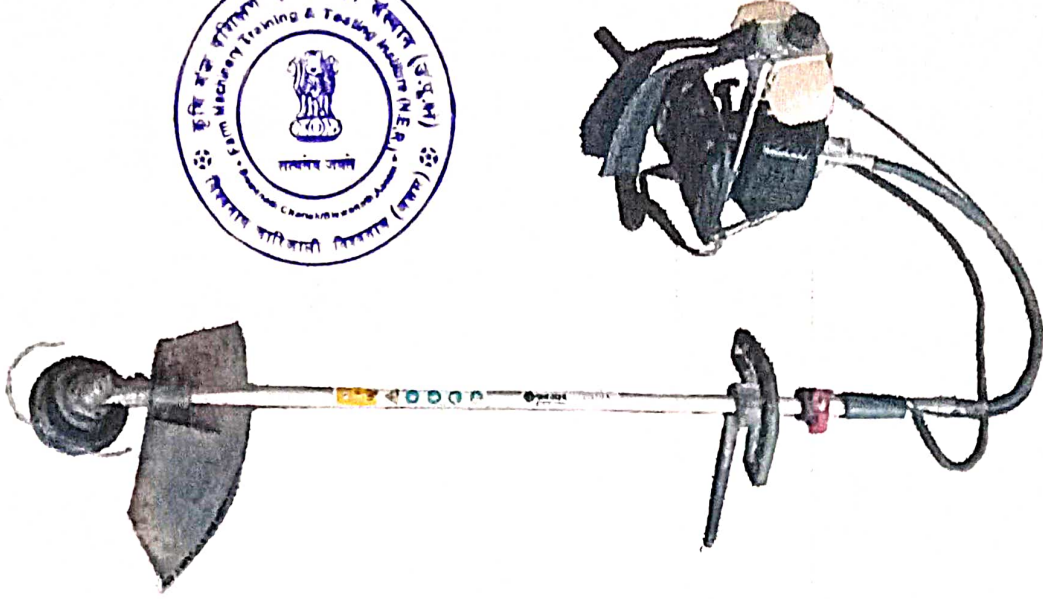


व्यावसायिक परीक्षण रिपोर्ट (प्रारंभिक)
COMMERCIAL TEST REPORT (Initial)
INCOMPLETE REPORT



संख्या / No.: Machine 37/380

माह / Month: March, 2021



SHRACHI BRUSH CUTTER, Model: SRBCBG430HA



भारत सरकार
GOVT OF INDIA

कृषि एवं किसान कल्याण मन्त्रालय

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

NORTH EASTERN REGION FARM MACHINERY TRAINING & TESTING INSTITUTE

विश्वनाथ चारिआलि, जिला-विश्वनाथ(असम)

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[AN ISO 9001:2015 CERTIFIED INSTITUTION]

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1. SCOPE OF TEST**1.1 LABORATORY TEST**

- a) Checking of specification
- b) Mechanical vibration measurement
- c) Noise measurement
- d) Engine performance test

1.2 FIELD TEST

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

**2. METHOD OF SELECTION**

The machine was directly submitted by the applicant for test at this institute. Hence method of selection was not known.

3. TEST CODE AND PROCEDURE

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

4. SAFETY WEARS

The following safety wears have been provided as essential to be used during operation of this machine

- a) Hand gloves
- b) Safety glass (Goggles)
- c) Protective cloth (apron)

5. SPECIFICATIONS**5.1 General:**

Name of the Machine	:	Brush Cutter
Name and address of the manufacturer	:	M/s SHANDONG HUASHENG PESTICIDE MACHINERY Co. LTD. No. 1 Zhongtian Road, Hi-Tech Industrial Development Zone, Linyi City, Shandong, 276017, China
Name & Address of Applicant/Importer	:	M/s BTL EPC LTD. (AGRO DIVISION) 2, Jessore Road, Dum Dum, Kolkata-700028, West Bengal, India
Make	:	M/s SHANDONG HUASHENG PESTICIDE MACHINERY Co. LTD.

Model : SRBCBG430HA
 Serial no. (apa) : NA
 Type : Engine operated machine
 Type of cutting attachment : Nylon rope
 Year of manufacture (apa) : 2017
 Country of origin : China
 Suitability (apa) : Cutting of weeds, bushes, grasses

5.2 Constructional details :

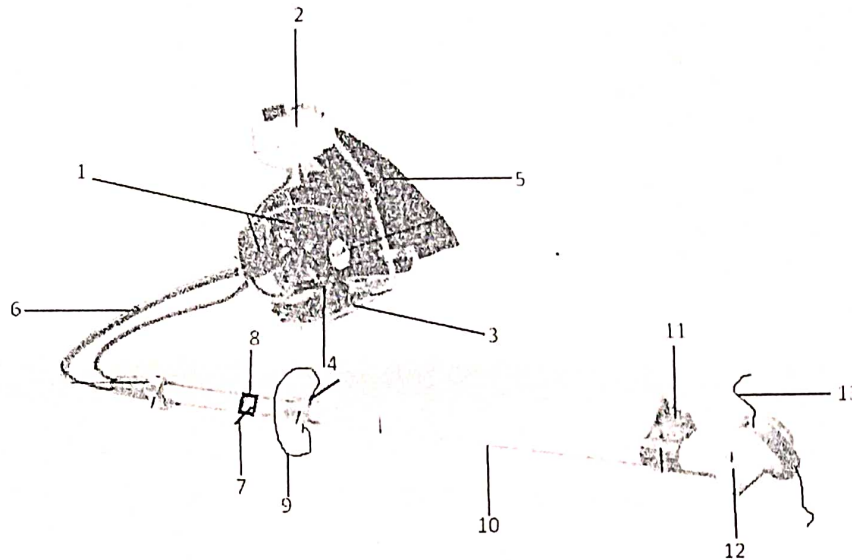


Fig. 1 : SHRACHI BRUSH CUTTER

Keywords:

- | | |
|------------------------------|----------------------------------|
| 1. Engine | 8. Engine stopping switch |
| 2. Fuel tank | 9. Handle |
| 3. Vibration damper | 10. Frame pipe |
| 4. Engine mounting frame | 11. Grass deflector |
| 5. Shoulder belt | 12. Gear case |
| 6. Flexible pipe | 13. Cutting element (nylon rope) |
| 7. Throttle cum clutch lever | |

5.3 Details of Prime Mover :

Make : M/s SHANDONG HUASHENG PESTICIDE MACHINERY Co. LTD., No. 1 Zhongtian Road, Hi-Tech Industrial Development Zone, Linyi City, Shandong, 276017, China

Model (apa) : BG430HA
 Type : Single cylinder, two stroke, air cooled, vertical, petrol engine

Serial no. : 1704032321
 Year of manufacture (apa) : 2017
 Country of origin : China
 Recommended high idle speed, rpm : 8000 ± 100
 Recommended low idle speed, rpm : 2350 ± 100
 Recommended rated speed, rpm : 3800 ± 350
 Engine rated power observed, kW : NR

SUMMARY OF FIELD PERFORMANCE TEST

S. No.	Parameters	
1.	Average number of grass/weeds in one m ²	607 to 1454
2.	Average height of grass/weeds, cm	11.8 to 19.8
3.	Mass of grass/weed cut, kg/h	47.81 to 76.11
4.	Average speed of operation, km/h	0.193 to 0.242
5.	Rate of work, ha/h	0.031 to 0.044
6.	Time required for one hectare, h	22.54 to 32.05
7.	Fuel consumption:	
		-l/h 1.163 to 1.345
		-l/ha 26.21 to 41.12

11.1 Rate of work

- a) The rate of work was recorded as 0.031 to 0.044 ha/h with operation speed 0.193 to 0.242 kmph.
- b) The time required to cover one hectare was recorded as 22.54 to 32.05h.

11.2 Quality of work

Mass of weed cut was observed as 47.81 to 76.11kg/h.

11.3 Fuel consumption

Fuel consumption was observed as 1.163 to 1.345 l/h and 26.21 to 41.12 l/ha

11.4 Labour requirement:

An averagely built person can able to operate the brush cutter for forty minutes at a stretch. Hence, two operators are required for continuous operation.

11.5 Adequacy of power of prime mover :

The power of prime mover was found adequate.

12. EASE OF OPERATION, ADJUSTMENTS & SAFETY PROVISION

12/1

Fatigue was observed just after 40 minutes of operation of the Brush Cutter, mainly, due to mechanical vibration. The operator complained about pain in different parts of his body like wrist, shoulder and right side thigh, etc. during operation.

13. DEFECTS, BREAKDOWNS AND REPAIRS

No major breakdown was occurred during 27.07 hours of field operation. However, during engine testing, rpm fluctuations to the tune of +1000 and -2000 rpm were observed.

14. COMPONENTS/ASSEMBLY INSPECTION

The brush cutter was dismantled after 27.07 hours of field operation.

15. COMMENTS & RECOMMENDATIONS

- 15.1 Engine rating test could not be conducted due to high engine rpm fluctuations to the extent of +2000 and -2000 rpm. This should be looked into for corrective action.
- 15.2 Noise at operator's ear level and bystander's 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.
- 15.3 The amplitude of mechanical vibration at various assemblies viz. steering handle, engine cover and frame pipe is on higher side. This calls for dampening down of vibration to improve the operational comfort and service life of the components.
- 15.4 Sudden stoppage and low rpm of the engine were observed during field test of the machine. This may be looked into for necessary corrective action.
- 15.5 During testing, Goggles and hand gloves were provided as safety devices. However, other safety devices viz. helmet, ear plug, mask, safety shoes etc. should necessarily be provided for the safety of operator.
- 15.6 No labeling plate indicating Year of manufacture, Power of prime mover, Specific fuel consumption, Rated speed of engine, Speed of cutting attachment, etc. has been provided on the machine. This may be looked into for necessary corrective action.

15.7 Adequacy of Literature

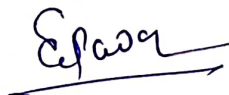
The following literatures covered with English was provided for reference during testing:

- Instruction manual
- Parts catalogue

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

TESTING AUTHORITY


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