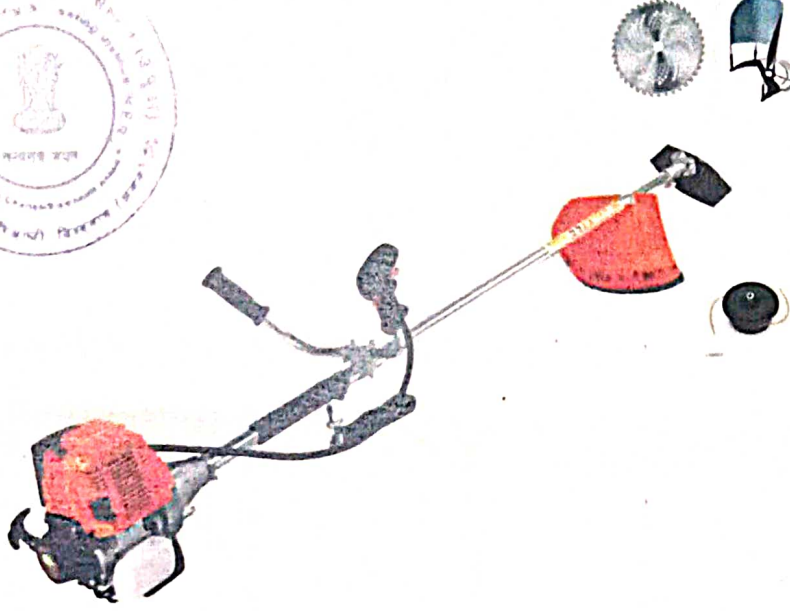


THIS TEST REPORT IS VALID UPTO 28.02.2027



MHASWADKAR BRUSH CUTTER
Model: BAM139ST



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

विश्वनाथ चरियाली: विश्वनाथ: असम, पिन-784 176

BISWANATH CHARIALI: BISWANATH: ASSAM, PIN - 784 176

[AN ISO 9001:2015 CERTIFIED INSTITUTION]

1. SCOPE OF TEST

1.1 LABORATORY TEST

- Checking of specifications
- Mechanical vibration measurement
- Noise measurement
- Wear assessment of critical components
- Engine performance test

1.2 FIELD TEST

- Rate of work
- Quality of work
- Labour requirement
- Adequacy of power of prime mover
- Ease of operation, adjustment & safety provisions
- Defects, breakdowns and repairs

2. METHOD OF SELECTION

The test sample was selected by the testing authority through random selection. The following samples were presented by the applicant during the random selection at Applicant's site.

Serial No. of test sample	Remarks
BM139ST067, BM139ST097, BM139ST102, BM139ST126, BM139ST148, BM139ST159, BM139ST187, BM139ST234, BM139ST249, BM139ST204, BM139ST105, BM139ST139, BM139ST094, BM139ST089, BM139ST051, BM139ST008, BM139ST023, BM139ST039, BM139ST002, BM139ST084	Out of 20 samples Sl. No. BM139ST102 was randomly selected.

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 safety wears such as hand gloves, goggles, protective cloth (apron), ear plug etc. were **not provided** during operation of this machine.

5. SPECIFICATIONS

5.1 General

Name of the Machine : Brush Cutter
Name and address of the manufacturer : Yongkang Vauban Trade Co., Ltd.

4th floor, 9-3 Jiuding Road,
Economic Development Zone,
Yongkang City, Zhejiang Province, China

Name & Address of Applicant/Importer : M/s Mhaswadkar Autolines Pvt. Ltd., 283/3/1B,
Karanje, New Radhika Road, Satara 415 001,
Maharashtra

Model : BAM139ST
Serial No. : BM139ST102
Type : Engine operated machine
Type of cutting attachment : Nylon rope, straight blade and circular blade
Year of manufacture (apa) : 2021
Country of origin : CHINA
Suitability (apa) : Cutting of weeds, bushes, grasses and harvesting
paddy crop

5.2 Constructional details :

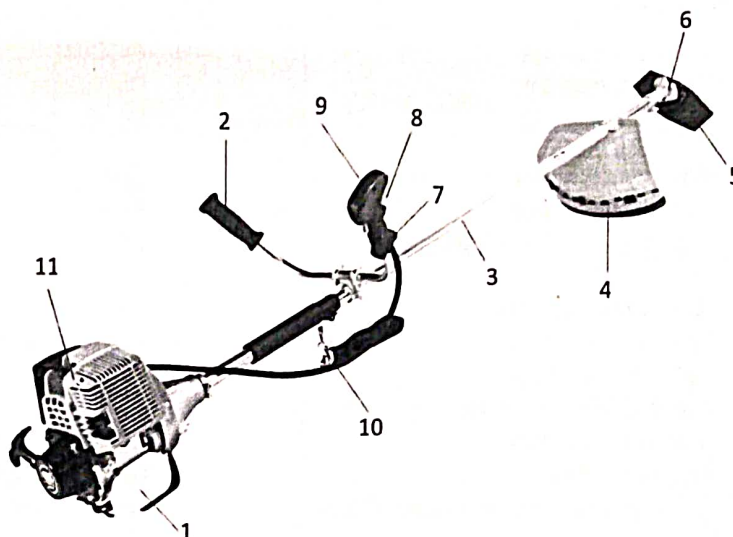


Fig. 1 : MHASWADKAR BRUSH CUTTER, MODEL: BAM139ST

Keywords:

- | | |
|----------------------------|--------------------------------|
| 1. Fuel tank | 7. RHS handle |
| 2. LHS handle | 8. Throttle cum clutch trigger |
| 3. Transmission cover pipe | 9. Engine stopping switch |
| 4. Deflector | 10. Shoulder strap |
| 5. Straight blade | 11. Engine |
| 6. Gear case | |

5.3 Details of Prime Mover

Make : Yongkang Vauban Trade Co., Ltd.
Yongkang City, Zhejiang Province, China

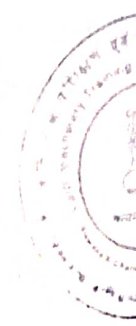
Model (apa) : BAM139F
Type : Single cylinder, air cooled, vertical, four stroke,
Spark ignition engine

Serial no. : ZXDI200032
Year of manufacture (apa) : 2021
Country of origin : CHINA
Recommended high idle speed, rpm : 8000 ± 100

FIELD PERFORMANCE TEST

Cutting attachment used : Circular blade
 Place of test : Village- Kusumbi, Dist. Satara, Maharashtra
 Usage : Paddy harvesting

Sr. No.	Parameters	Test trial	
		I	II
		22.12.2021	23.12.2021
1	Date of test	15.8	15.8
2	Avg. grain moisture content (%)	61.6	62.1
3	Avg. straw moisture content (%)	Sweta	
4	Variety of paddy crop	84.0	84.6
5	Avg. plant height, cm	18.8	18.9
6	Avg. length of ear head, cm	184	190
7	Avg. No. of grains per ear head	29	29
8	No. of hills per m ²	10	9
9	No. of tillers per hill	6.20	4.00
10	Net test duration, h		
11	Engine speed, rpm		
	High idle	7900	7900
	Rated	6000	6000
		7.2	7.1
12	Avg. stubble height, cm	1728.6	1727.2
13	Avg. mass of crop per m ² , g	365.6	354.6
14	Avg. mass of grain per m ² , g	3.72	3.87
15	Straw-grain ratio	0.019	0.019
16	Actual are harvested, ha/h	52.63	52.63
17	Time required for one ha, h/ha	3642.0	3532.5
18	Mass of grain recovered, kg/ha		
19	Losses (% of total grain yield)		
	Pre harvest loss, %	0.33	0.36
	Post harvest loss, %	0.44	0.38
20	Fuel consumption		
	l/h	0.637	0.637
	l/ha	33.52	33.53



FIELD PERFORMANCE TEST

Cutting attachment used : Nylon rope
Place of test : Village- Jambhalmure, Dist. Satara, Maharashtra
Usage : Weeds cutting

Sr. No.	Parameters	Test trial	
		I	II
1	Date of test	24.12.2021	24.12.2021
2	Net test duration, h	4.15	4.00
3	Avg. height of weeds, cm	56.6	56.0
4	Thickness of stem of weeds at cutting height, mm	1.2 to 1.6	
5	Avg. No. of weeds per m ²	474	484
6	Avg. mass of weeds per m ² , g	556.2	531.6
7	Engine speed, rpm		
	High idle	8000	8000
	Rated	6000	6000
8	Actual area cut, ha/h	0.048	0.049
9	Time required for one ha, h/ha	20.83	20.41
10	Mass of weeds cut		
	kg/h	244.32	234.71
	kg/ha	5090	4790.4
11	Fuel consumption		
	l/h	0.619	0.620
	l/ha	12.89	12.65

FIELD PERFORMANCE TEST

Cutting attachment used : Straight blade
Place of test : Village- Jambhalmure, Dist. Satara, Maharashtra
Usage : Bush cutting

Sr. No.	Parameters	Test trial	
		I	II
1	Date of test	25.12.2021	25.12.2021
2	Net test duration, h	4.40	2.60
3	Avg. height of bush, m	1.94	1.95
4	Thickness of stem of bush at cutting height, mm	9.7 to 10.5	7.2 to 11.6
5	Avg. No. of bush per m ²	27	28
6	Avg. mass of bush per m ² , g	2909.6	3063.8
7	Engine speed, rpm		
	High idle	8000	8000
	Rated	6000	6000
8	Actual area cut, ha/h	0.032	0.029
9	Time required for one ha, h/ha	31.25	34.48
10	Mass of bush cut		
	kg/h	817.15	798.83
	kg/ha	25536	27546
11	Fuel consumption		
	l/h	0.710	0.715
	l/ha	22.18	24.65

Ring end gap:

Rings	Ring end gap, mm			Max. permissible end gap limit, mm
	Top	Middle	Bottom	
1 st comp. ring	0.25	0.25	0.25	1.0
2 nd comp. ring	0.30	0.30	0.30	
Oil ring	*	*	*	

*not recorded due to ring design constraints

Ring side clearance:

Rings	Ring side clearance, mm	Max. permissible clearance limit, mm
1 st comp. ring	0.05	0.30
2 nd comp. ring	0.05	
Oil ring	*	

*not recorded due to ring design constraints

Main bearings: 6201LU and 6002 2RS

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	0.02	NA	0.3
2	Ball bearing	NA			

Big end bearing:

Bearing No.	Clearance, mm		Max. permissible clearance limit, mm	
	Diametrical	Axial	Diametrical	Axial
1	Needle bearing	--	0.146	1.10

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

16.2 Transmission system:

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

17. COMMENTS & RECOMMENDATIONS

- 17.1 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.
- 17.2 The amplitude of mechanical vibration at various assemblies viz. steering handle, engine cover and transmission cover pipe was on higher side. This calls for dampening down of vibration to improve the operational comfort and service life of the components.
- 17.3 The specific fuel consumption at rated power as observed during engine test was exceeded by more than 5 percent as declared by the applicant which does not fulfil the requirement of IS 7347-1974

This should be looked into for corrective action.

- 17.4 The power mentioned on the machine labeling sticker was 1.5 kW. However, the rated power observed during test was 0.46 kW. This should be looked into for corrective action.
- 17.5 Safety wears viz. goggles, hand gloves, ear plug, mask, safety shoes etc. were not provided. It is recommended that safety wears should necessarily be provided for the safety of operator.
- 17.6 Shoulder belts were not provided with cushion material to dampen the vibration on shoulders of operator. This should be looked into for ease of operation.
- 17.7 Sometimes clogging of crop and weeds at cutter blade was observed during paddy harvesting operation with circular blade attachment. This should be looked into for improvement.

17.8 Adequacy of Literature

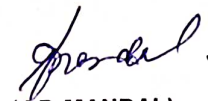
The following literature in English language was provided for reference during testing:

- Operator's/ Service manual
- Parts catalogue

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

TESTING AUTHORITY


(M.R. PATIL)
AGRICULTURAL ENGINEER


(J.P. MANDAL)
Sr. AGRICULTURAL ENGINEER


(K.K. NAGLE)
DIRECTOR

18. APPLICANT'S COMMENTS

Para No.	Our Reference	Applicant's Comments
18.1	17.1	The suggestion is noted & company would work on the same to bring down the noise level at operator's ear level.
18.2	17.2	The suggestion is noted & company would work on the same to bring down the amplitude of mechanical vibration.
18.3	17.3	We will take corrective improvements in future products.
18.4	17.4	We will take corrective improvements in future products.
18.5	17.5	The suggestion is noted & company will provide the safety wears to the operator.
18.6	17.6	We will take corrective improvements in future products.
18.7	17.7	We will take corrective improvements in future products for blade improvements.
18.8	17.8	We will be brought the manual as per IS: 8132-1999 and also will provide in Hindi & other vernacular languages.