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COMMERCIAL TEST REPORT

संख्या / No. : Equip.-12/149
माह / Month : February, 2012



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16/3/12

HONDA UMK435T U2ST BRUSH CUM PADDY CUTTER (SELF PROPELLED)



भारत सरकार
GOVT OF INDIA

कृषि मन्त्रालय
MINISTRY OF AGRICULTURE

कृषि एवं सहकारिता विभाग

DEPARTMENT OF AGRICULTURE AND COOPERATION

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4. SPECIFICATIONS**4.1 General**

Name of Machine	:	Brush cum Paddy Cutter
Type of Machine	:	Self Propelled
Manufacturer	:	M/S Thai Honda Manufacturing Co. Ltd. 410 Ladkrabang Industrial Estate Gh – Alongkrung Road, Lamplatu Landkrabang, Thailand
Make	:	Honda
Model	:	UMK 435T U2ST
Country of origin	:	Thailand
Frame Serial no.	:	HAAT-1156569
Year of manufacture	:	2008
Name & Adress of Applicant	:	M/S Honda Siel Power Products Ltd. Plot No. – 5, Sector – 41 (Kasna), Greater Noida Industrial Development Area, Dist.-Gautam Budh Nagar (U.P.)- 201 306
Types of crop recommended	:	Paddy
Type of weeds / brush recommended	:	Grassy weeds, outgrowth twines, creepers

4.2 Prime Mover

Make	:	Honda
Model	:	GX35
Type	:	4-stroke, overhead cam, single cylinder petrol engine
Year of manufacture	:	2008
Serial No.	:	GCAMT-1584163
Country of origin	:	Thailand
Recommended idling speed, rpm	:	3100±200
Recommended rated speed, rpm	:	7000
Speed at maximum torque, rpm (apa)	:	5000

4.3 Cylinder and Cylinder head

Number	:	One
Disposition	:	Vertical
Bore x stroke (mm)	:	39 x 30(apa)

	Capacity(cc)	: 35.8 (apa)
	Compression ratio	: 8:1
	Valve clearance(mm)	
	Inlet	: 0.08±0.02
	Exhaust	: 0.11±0.02
	Make of carburetor	: Honda (apa)
	Type of carburetor	: Diaphragm type
	Make of spark plug	: NGK
	Model of spark plug	: CMR5H
	Electrode gap of spark plug, (mm)	: 0.6 to 0.7
4.4	Fuel system	
	Type of fuel system	: Vacuum type
	Material of fuel tank	: Plastic
	Capacity of fuel tank, (l)	: 0.7
	Location of fuel tank	: At the bottom of engine
	Type of fuel filter	: Felt type
	Fuel ON/OFF	: Not provided
4.5	Air cleaner	
	Make	: Honda (apa)
	Type	: Semi-dry type
	Type of element	: Foam
	Location	: On RHS of engine
	Recommended service schedule	: After every 25 working hours
4.6	Exhaust	
	Type of silencer	: Horizontal discharge
	Position of silencer	: On LHS of engine
4.7	Lubrication system	
	Type	: Splash
	Lubricant recommended	: SAE 30, 10W30
	Lubricant capacity, (l)	: 0.1
	Lubricant change period, (h)	: First change after 10 operating hours subsequently after every 50 hours operation.
4.8	Cooling system	
	Type	: Forced air circulation

Component	Duration of operation (h)	Initial mass (g)	Mass after operation	Loss of mass (g)	% of wear	% wear on hour basis
Circular disc	11.1	390.0	387.0	3.0	0.77	0.07
Straight blade	10.1	264	255.0	9.0	3.41	0.34

10.6.2 After about 2.5 hours of operation, a new rope is required to be installed.

11. EASE OF OPERATION & ADJUSTMENTS

Fatigue was observed just after half an hour of operation of the Brush cum Paddy Cutter, mainly, due to excessive mechanical vibration and noise. The operator complained about pain in different parts of his body like wrist, shoulder and right side thigh, etc during operation. Work-rest cycle for an average operator during paddy harvest with circular disc and crop deflector attachment was as follows:

35 minutes work → 10 minutes rest → 25 minutes work → 15 minutes rest → 25 minutes work → 15 minutes rest → 15 minutes work → so on.

12. DEFECTS, BREAKDOWNS AND REPAIR

No major breakdowns were occurred during 26.4 hours of field operation.

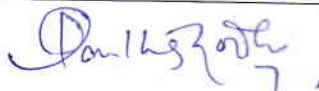

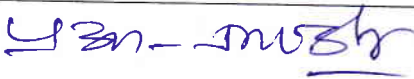

13. COMMENTS & RECOMMENDATIONS

- 13.1** Noise at operator's ear level and bystander's level was observed on higher side against warning and danger limits of 85 dB(A) and 90 dB(A) respectively 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.
- 13.2** The amplitude of mechanical vibration on various assemblies of the machine is on higher side. This calls for dampening down of vibration to improve the operational comfort and service life of components.
- 13.3** The capacity of fuel tank is only 0.7 0litres, which does not appear to be adequate. This calls for necessary modification.

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- 13.4 A fuel on/off knob may be considered for providing in the fuel system of engine.
- 13.5 During testing, only Goggles and ear plugs were provided as protective devices. All the necessary protective accessories, as mentioned in the Owner's manual, like arm cover, gloves, leg protector, face shield, helmet, etc was not provided. All these should necessarily be provided for the safety of operator.
- 13.6 The chemical composition of circular disc does not conform to relevant Indian Standards. This should be looked into.
- 13.7 Although a special device called crop deflector is provided to handle the paddy crop properly, yet the fuel economy (27.49 to 42.50 l/ha during paddy harvest and 38.22 to 43.68 l/ha during grass cutting); and the rate of work during paddy harvesting (0.020 to 0.028 ha/h) was not found too satisfactory. Necessary actions may be undertaken for improvement.
- 13.8 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.
- 13.9 **Technical Literature**
The following literatures were provided for reference during testing:
- Owner's manual
 - Shop manual
 - Parts catalogue
- It is, however, recommended to bring out the manuals also in Hindi and other vernacular languages as per IS: 8132-1999.

TESTING AUTHORITY

P. LODH SENIOR TECHNICAL ASSISTANT	
A. PANDEY SENIOR TECHNICAL ASSISTANT(I)	
P. K. PANDEY SENIOR TEST ENGINEER	
M. K. VISHWAKARMA DIRECTOR	

14. APPLICANT'S COMMENTS

One copy of draft test report was made available to the applicant for their comments. Yet No comments was received. However, applicant has submitted and undertaking that they will provide a labeling plate in the machine indicating the following:

- Make of machine
- Model of machine
- Year of manufacture
- Power of prime mover
- Specific Fuel Consumption
- Rated speed of Engine