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



संख्या/No.: Machine 129/500 माह / Month: July 2024

THIS TEST REPORT IS VALID UPTO 31.7.2031



AGRINEER, APW-606, POWER WEEDER



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 बिश्वनाथ चारिआलि, जिला - बिश्वनाथ (असम) BISWANATH CHARIALI, DIST- BISWANATH, ASSAM, PIN - 784 176 [AN ISO 9001:2015 CERTIFIED INSTITUTION]

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Machine 129/500

AGRINEER, APW-606 POWER WEEDER

	4. SPECIFICATIONS			
4.1	General:			
	Make	:	AGRINEER	
	Model	:	APW-606	
	Name and address of manufacturer	:	Chongqing Agrineer International Trading Company Ltd., Building 4, No. 3 Beiding Avenue, Sanjiao Industrial Park, Yongchuan District, Chongqing, CHINA	
	Name and address of applicant	:	Agrineer Agro Machinery Pvt. Ltd., 182, Vechale, Satara, Maharashtra, 415 519	
	Name of machine	1	Power weeder	
	Type of machine		Self propelled, Walk behind	
	Working size of machine (mm)	:	1120	
	Year of manufacture	:	2024	
	Serial no. of machine	:	240003	
4.2	Details of prime mover: Make	:	Chongqing Agrineer International	
			Trading Company Ltd.	
	Model (apa)	3	APW-606	
	Туре	:	4 stroke, Single cylinder, Air cooled, Spark	
			Ignition engine	
	Year of manufacture		2024	
	Serial Number		240003	
	Country of origin	:	CHINA	
	Recommended high idle speed (rpm)	:	4050	
	Recommended low idle speed (rpm)		1850±100	
	Recommended rated speed (rpm)	٤	3850	
	Rated power observed (kW)	:	4.85	
	Rated power declared (apa) (kW)	:	4.9	

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AGRINEER, APW-606 POWER WEEDER

SI .No.	Parameters		Observations		
1	Type of soil		Light		
2	Soil moisture (%)		11.3 to 13.1		
3	Bulk density of soil (g/cc)		1.66 to 1.72		
4	Forward speed of operation (kmph)		1.70 to 1.87		
5	Depth of cut (cm)	1	6.4 to 7.2		
6	Width of cut (m)	:	1.12		
7	Area covered (ha/h)		0.158 to 0.176		
8	Time required for one ha (h)	:	5.68 to 6.33		
9	Field efficiency (%)		83.16 to 84.73		
10	Weeding efficiency (%)	•	83.24 to 84.52		
11	Fuel consumption				
	l/h	:	0.90 to 1.20		
	l/ha	:	5.42 to 7.59		

11.1 Rate of work

- Rate of work was recorded as 0.158 to 0.176 ha/h and the forward speed of operation varied from 1.70 to 1.87 kmph.
- Time required to cover one hectare was recorded as 5.68 to 6.33 h.

11.2 Quality of work:

- Depth of cut was recorded as 6.4 to 7.2 cm.
- Working width was observed as 1.12 m.
- Field efficiency was found as 83.16 to 84.73 %.
- Weeding efficiency was recorded as 83.24 to 84.52 %.



COMMERCIAL

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11.3 Adequacy of power of prime mover:

The power of prime mover was found adequate.

11.4 Wear Analysis of rotor blades:

61 N	Initial mass	Final mass	Loss of mass	Percentage wear of rotor blades		
SI. No	(g)	(g)	(g)	After 25.5 hrs	Per hour	
L-1	314.33	311.47	2.86	0.91	0.03	
L-2	314.35	310.91	3.44	1.09	0.04	
L-3	315.08	312.82	2.26	0.72	0.03	
L-4	318.93	316.06	2.87	0.90	0.03	
R-1	314.40	311.77	2.63	0.84	0.03	
R-2	314.97	312.09	2.88	0.91	0.03	
R-3	315.00	312.28	2.72	0.86	0.03	
R-4	317.00	312.88	4.12	1.30	0.05	

The hourly rate of wear of blade on mass basis after field operations was recorded as 0.03 to 0.05 %.

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15. COMMENTS AND RECOMMENDATIONS

- 15.1 During components/ assembly inspection and assessment of wear, it was observed that maximum permissible wear limit of cylinder bore diameter and piston diameter exceeded the declared value by the manufacturer/applicant. This should be looked into for corrective action.
- 15.2 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 2011). This may be looked into.
- 15.3 It was observed that during engine performance test, at full Load, engine speed was not stable at rated speed. This shall be looked into for corrective action.
- **15.4** The hardness of rotary blades does not conform to the requirement of IS 6690:1981 (Reaffirmed 2012). This may be looked into for corrective action.
- 15.5 Machine maneuverability while taking turns during field operation was not comfortable. It shall be looked into for ease of operation for the operator.
- 15.6 Noise at operator's ear level was observed on higher side against danger limit of 90 dB(A) as specified by the International Labour Organization (ILO) for continuous exposure of 8 hours per day. This calls for reduction in noise level to improve the operator's comfort & safety.
- 15.7 The amplitude of mechanical vibration marked as (*) is on drastically higher side and is directly concerned with operator's health, safety and comfort. Besides, it is also adversely affect the useful life of machine components. In view of above, this deserves to be given top priority for corrective action.
- **15.8** Type of engine (i.e. Petrol/Diesel) and manufacturer's name and address should be provided on the labeling plate of the machine. This should be looked into for corrective action.

15.9 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 ber IS: 8132-1999.

Machine 129/500

AGRINEER, APW-606 POWER WEEDER

COMMERCIAL (INITIAL)

TESTING AUTHORITY

(M.R. PATIL) AGRICULTURAL ENGINEER

P. K. Be-

(P. KAMALABAI) DIRECTOR

Draft test report compiled by - Shri J. Bhon Singh, STA

16. APPLICANT'S COMMENTS

Para No.	Our Reference	Applicant's Comments		
16.1	15.1 to 15.9	We will take necessary action as per comments and recommendations in the test report for improvement in the future production.		



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