

व्यावसायिक परीक्षण रिपोर्ट
COMMERCIAL TEST REPORT

संख्या/ No.: Powerweeder-143/2835/2022

माह/Month: April, 2022

THIS TEST REPORT VALID UP TO : 30th April, 2027



**V.P.ELECTRIC, VP05FS
MURUGAN POWER WEEDER**



भारत सरकार

Government of India

कृषि एवं किसान कल्याण मंत्रालय

Ministry of Agriculture and Farmers Welfare

कृषि, सहकारिता एवं किसान कल्याण विभाग

Department of Agriculture, Cooperation and Farmers Welfare

उत्तरी क्षेत्र कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

Northern Region Farm Machinery Training and Testing Institute

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[ISO 9001:2015 CERTIFIED]

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10. HARDNESS & CHEMICAL COMPOSITION OF BLADES: Hardness & chemical analysis of primary element of the blade were carried out as per IS: 9813-2002. The details of same are given in Table 3 & 4

10.1 Table 3 : Hardness of flate blade

As per IS: 9813-2002	Hardness observed (HB)	Remark
353 to 421	228 (Average)	Does not conform

10.2 Table 4 : Chemical composition of flate blade

Sr. No.	Material	Requirement as per IS: 9813-2002	As observed	Remark
1.	Carbon (C)	0.4 to 0.7	0.40	Conforms
2.	Silicon (Si)	--	0.50	--
3.	Manganese (Mn)	--	1.24	--
4.	Sulphur (S)	--	0.10	--
5.	Phosphorous (P)	--	0.02	--

11. RUNNING-IN

The Power weeder was run-in for 0.5 hour before field performance test as recommended by the applicant. All the fasteners were checked & tightened thereafter.

12. FIELD TEST

The field test under dry land condition was conducted for 25.57 hours. The field performance tests was conducted at the rated 2000 rpm with flat blade attachment for 25.57 hours. In all, 5 tests trials were conducted in sandy loam soil at the NRFMTTI farm, Hisar. The results of the field test for dry land operation is summarized in Table-7

Crop parameters

- i) Type of weed - Seasonal weed
- ii) Height of weed, cm - 12 to 39

Table 5: SUMMARY OF FIELD PERFORMANCE TEST

Sr. No.	Parameter		Flat blade weeder
i)	Type of soil	:	Sandy loam
ii)	Soil moisture, %	:	6.80 to 8.00
iii)	Bulk density of soil, g/cc	:	1.27 to 1.36
iv)	Speed of operation, kmph	:	2.41 to 2.59
v)	Depth of cut, cm	:	5.0 to 5.8
vi)	Width of cut, m	:	0.66 to 0.67
vii)	Area covered, ha/h	:	0.120 to 0.138
viii)	Time required for one ha	:	7.25 to 8.30
ix)	Fuel consumption		
		l/h	: 0.40 to 0.46
		l/ha	: 3.10 to 3.75
x)	Weeding efficiency, %	:	84.17 to 90.40
xi)	Field efficiency, %	:	74.53 to 80.70

28.	Literature	Operator manual, service manual and Parts catalogue should be provided.	Provided	Conforms
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Note:- The implementation of critical technical specifications has been deferred till 30.09.2022 vide Ministry's O.M. No. 13-1/2021-M&T (I&P) dated 03.02.2022

16. COMMENTS & RECOMMENDATIONS

16.1 Mechanical vibration

The amplitude of mechanical vibration marked as (*) on the relevant chapter, are on drastically higher side. It is not just directly concerned with operator's health, safety and comfort, but also adversely affect the useful life of the components. In view of above, this deserve to be given top priority for corrective action.

16.2 The chemical composition of flat blade does not conform, to the requirements of IS: 9813-2002. This needs to be looked into for corrective action.

16.3 The hardness of flat blade does not conform, to the requirements of IS: 9813-2002. This needs to be looked into for corrective action.

16.4 The make, model and serial number of fuel injection pump (F.I.P) is not specified. It should be specified.

16.5 The make and model name of injector is not specified. It should be specified.

16.6 The make and model name of governor is not specified. It should be specified.

16.7 The spark arresting device is not provided. It should be provided.

16.8 The labeling plate should be riveted on the machine with following information.

- a) Name and address of manufacturer & applicant
- b) Country of origin
- c) Make
- d) Model
- e) Serial number
- f) g) Engine, hp
- h) Engine rated speed ,rpm
- i) S.F.C
- j) Year of manufacture

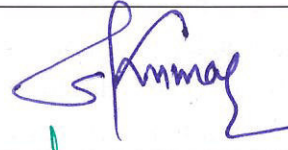
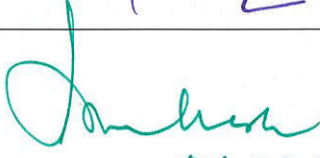
17. TECHNICAL LITERATURE

The following literatures are provided by the applicant during the test.

- a) Operator manual
- b) Parts catalogue
- c) Service manual

However, the manuals need to be updated as per IS: 8132-1999.

TESTING AUTHORITY

SANJAY KUMAR AGRICULTURAL ENGINEER	
Dr. MUKESH JAIN DIRECTOR	 04.04.2022

Draft test report compiled by Vikram Sr. Technician

18. APPLICANT'S COMMENTS

No specific comments received from the applicant.