

व्यावसायिक परीक्षण रिपोर्ट
COMMERCIAL TEST REPORT

संख्या/ No.: IMP-1027/2467/2020
माह/Month : May, 2020

THIS TEST REPORT VALID UP TO : 31st MAY, 2027



LEVEL MASTER – LMT LASER LAND LEVELER



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

ट्रैक्टर नगर, सिरसा रोड, हिसार, (हरियाणा) - 125 001

Tractor Nagar, Sirsa Road, HISAR (Haryana)-125 001

[ISO 9001:2015 CERTIFIED]

Website: <http://nrfmtti.gov.in/>

E-mail: fmti-nr@nic.in

Tele./FAX: 01662-276984

14. HARDNESS AND CHEMICAL COMPOSITION OF CRITICAL PARTS

14.1 The result of test of Hardness of blade is tabulated in Table-VII.

TABLE- VII

As per IS :9813:2002	Hardness observed (HB)	Remark
353 to 421	170 to 191	Does not conform

14.2 Chemical composition

TABLE- VIII.

Sr. No.	Material	Requirement as per IS 9813:2002	As observed	Remark
1.	Carbon (C)	0.4 to 0.7	0.2158	Does not conforms
2.	Silicon (Si)	--	0.3017	--
3.	Manganese (Mn)	--	0.2976	--
4.	Sulphur (S)	--	0.0984	--
5.	Phosphorous (P)	--	0.0470	--

15. FIELD TEST

The field tests of 23.4 hours with 4 replications were conducted. The field performance observations are given in Annexure-I to V.

The summary of field performance test is given in Table IX.

TABLE-IX: Summary of field performance

Sl. No.	Parameters	Observations
i)	Tractor used	ACE DI 550
ii)	Gear used	H-2
iii)	Type of soil	Sandy Loam
iv)	Av. soil moisture, %	8.7 to 14.0
v)	Av. bulk density of soil, g/cc	Before operation 1.335 to 1.564 After operation 1.530 to 1.750
vi)	Av. area covered, ha/h	0.0325 to 0.1090
vii)	Av. time required for one hectare, h	9.17 to 30.77
viii)	Av. fuel consumption	
	- l/h	3.73 to 4.52
	- l/ha	17.60 to 114.77
ix)	Av-total volume of cut	53.89 to 283.62
x)	Av- total volume of fill	18.94 to 131.67
xi)	Av- total volume of earth work	m ³ 72.83 to 415.29
		(m ³ /h) 31.67 to 58.53
		(m ³ /l) 7.59 to 14.46
xii)	Leveling Index before operation	3.81 to 19.38
xiii)	Leveling Index after operation	0.56 to 0.90
xiv)	Draft requirement, kg Range (Average)	391 to 419



15.1 Rate of Work

15.1.1 The field capacity in sandy loam soil was recorded as 00.0325 to 0.1090 ha/h.

15.1.2 Av-total volume of cut 53.89 to 283.62 m³

15.1.3 Av- total volume of fill 18.94 to 131.67 m³

15.1.4	Av- total volume of earth work	m ³	72.83 to 415.29
		(m ³ /h)	31.67 to 58.53
		(m ³ /l)	7.59 to 14.56

15.1.5 The time required to cover one hectare area was recorded as 9.17 to 30.77 h.

15.2 Quality of work

Leveling Index before and after field operation was observed from 3.81 to 19.38 and 00.561 to 0.90 respectively.

15.3 Fuel Consumption:

- l/h : 3.73 to 4.52

l/ha : 17.60 to 114.77

16. CRITICAL TECHNICAL SPECIFICATION

Deferred till 31.12.2020 vide Ministry O.M. No 13-13/2020-M&T, (I&P) dated 24.04.2020

17. CONFORMITY TO INDIAN STANDARD

16.1 Table -X: Material for different components of leveler (As per IS: 9813-2002)			
S. No.	Components	Material(Requirements)	Observations
I	Frame	Mild steel	Mild steel
ii	Hitch	Mild steel	Mild steel
iii	Hitch pin	Carbon steel	Carbon steel
iv	Pin adjusting screw	Carbon steel	N.A.
V	Mould board frame	Mild steel	Mild steel
Vi	Side plate	Mild steel	Mild steel
Vii	Mould board	Mild steel	Mild steel
viii	Scarified	Carbon steel	N.A.
16.2 Other requirements: (As per IS: 9813-2002)			
S.N.	REQUIREMENTS	Observations	Conformity
i	The size of terracer shall be determined by length of blade plus the length of extension blade if any, in meters. The nominal size of the terracer may be between 1.5 to 3.5 meter.	The size of terracer blade is 2.073 m.	Conforms
ii	The beveling shall be done on lower side of the blade. Both the upper and lower sides of the blade may be beveled to make it reversible.	Not provided	Does not Conform
iii	The blade shall be beveled. The length of beveling may be 10 mm. The thickness of the edge shall be as far as possible uniform and may be between 1.5 to 3 mm.	Not provided	Does not Conform
iv	The corners of the square holes shall be slightly rounded.	Round hole provided	--

16.4	Marking and packing:		
	<p>Marking- Each terracer shall be marked with:</p> <p>a) Manufacturer's name and trade-mark, if any.</p> <p>b) Size; and</p> <p>c) Batch or code number</p> <p>These particulars shall be stamped, embossed or engraved on metallic plate and rigidly fitted on a non-wearing part of terrace.</p>	Manufacturer name and serial number, marked	Does not conform

18. SOUNDNESS OF CONSTRUCTION

No noticeable breakdown during 23.4 hours of field operation.

19. COMMENTS & RECOMMENDATION

- 19.1** Marking of the implement does not provide all the important information to the users. The identification plate should provide at least following information:-
- i) Manufacturer's Name and Address
 - ii) Make and model of the implement
 - iii) Serial No. & size
 - iv) Year of manufacture
 - v) Trade name
 - vi) Approx mass
 - vii) Minimum power of prime mover/tractor [kW(Ps)].
- 19.2** The safety warnings, signs and pictograms are not provided on the machine. It should be provided for safety of the users.
- 19.3** The hardness & chemical composition of the soil cutting blade does not meet the requirement of IS: 9813-2002. This Should be looked into.
- 19.4** The beveling edge is not provided on cutting blade . It should be provided.



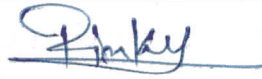

20. TECHNICAL LITERATURE

Following literature was submitted by applicant for reference during test.

- (i) Operation and Service manual

However, the operation and service manual should be updated as per IS: 8132-1999.
Part's Catalogue should be provided.

TESTING AUTHORITY

RINKU PRASAD GUPTA TECHNICAL ASSISTANT	
P. K. PANDEY DIRECTOR	

21. APPLICANT'S COMMENTS

Para No.	Our reference	Applicant Comment's
21.1	19.1	We will provide all the important information on the identification plate.
21.2	19.2	The safety warnings, signs and pictograms will be provided on the machine for the safety of the users.
21.3	19.3	We will looked into.
21.4	19.4	We will provide.

