

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



**SPECTRA PRECISION (TRIMBLE NAVIGATION)
AG 402, 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: fnti-nr@nic.in

Tele./FAX: 01662-276984

15. FIELD TEST

The field tests of 22 hours with 6 replications were conducted. The field performance observations are given in Annexure-I.

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

TABLE-IX: Summary of field performance

Sl. No.	Parameters	Observations	
i)	Tractor used	Mahindra, Arjun-555 DI	
ii)	Gear used	H-1	
iii)	Type of soil	Sandy loam	
iv)	Av. soil moisture, %	15.8 to 19.1	
v)	Av. bulk density of soil, g/cc	Before operation	1.72 to 1.93
		After operation	1.83 to 1.94
vi)	Av. area covered, ha/h	0.058 to 0.125	
vii)	Av. time required for one hectare, h	8.0 to 17.24	
viii)	Av. fuel consumption		
	- l/h	3.05 to 3.90	
	- l/ha	24.40 to 63.92	
ix)	Av-total volume of cut, m ³	36.56 to 103.66	
x)	Av- total volume of fill, m ³	19.96 to 42.74	
xi)	Av- total volume of earth work	m ³	56.53 to 146.22
		(m ³ /h)	25.66 to 40.01
		(m ³ /l)	6.58 to 11.30
xii)	Leveling Index before operation, cm	3.03 to 7.36	
xiii)	Leveling Index after operation, cm	0.32 to 0.56	
xiv)	Draft requirement, kg Range (Average)	371 to 547	

15.1 Rate of Work

15.1.1 The field capacity in sandy loam soil was recorded as 0.058 to 0.125 ha/h.

15.1.2 Av-total volume of cut 36.56 to 118.18 m³

15.1.3 Av- total volume of fill 19.96 to 42.74 m³

15.1.4	Av- total volume of earth work	m ³	56.53 to 146.22
		(m ³ /h)	25.66 to 42.89
		(m ³ /l)	6.58 to 11.30

15.1.5 The time required to cover one hectare area was recorded as 8.0 to 17.24 h.

15.2 Quality of work

Leveling Index before and after field operation was observed from 3.03 to 7.36 and 0.32 to 0.56 respectively.

15.3 Fuel Consumption:

- l/h : 3.05 to 3.90

l/ha : 24.40 to 63.92

16 CRITICAL TECHNICAL SPECIFICATIONS

Deferred till 31.03.2021 vide Ministry O.M. No 13-13/2020 M&T, (I&P) dated 22.12.2020.

x	The blade and mould board should have a contour such that it allows the free rolling of earth. The curvature of mould board with blade shall be 300 or 375 mm with a tolerance of ± 20 mm.	The mould board has a contour shape with the curvature of 147 mm that allows the free rolling of earth.	Does not conform
17.3	Workmanship and finish:		
i	All components of terracer shall be free from pits, burrs and other visual defects.	All components of terracer are free from pits, burrs and other visual defects.	Conforms
ii	The welding of various parts shall be free from blow holes, exposed porosity, exposed inclusions unfilled crate and un fused welds.	The welding of various parts are free from blow holes, exposed porosity, exposed inclusions unfilled crate and un fused welds.	Conforms
iii	The exposed metallic parts shall be free from rust and shall have a protective coating.	The exposed metallic parts are free from rust and have a protective coating.	Conforms
17.4	Marking and packing:		
	Marking- Each terracer shall be marked with: a) Manufacturer's name and trade-mark, if any. b) Size; and c) Batch or code number These particulars shall be stamped, embossed or engraved on metallic plate and rigidly fitted on a non-wearing part of terrace.	Not marked	Does not conform

18. SOUNDNESS OF CONSTRUCTION

No noticeable breakdown occurred during field test.

19. COMMENTS & RECOMMENDATION

19.1 The labeling plate **MUST** be riveted on the machine with following information

- i) Name and address of manufacture
- ii) Country of origin
- iii) Make
- iv) Model
- v) Year of manufacture
- vi) Serial number
- vii) Wt in kg
- viii) Tractor kW/hp



- 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 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) Operating manual of laser land leveler.
(ii) User manual of Transmitter.

However, the user manual should be updated as per IS: 8132-1999.

The part's catalogue and service manual should provided for guidance of user's and technical persons.

TESTING AUTHORITY

SANJAY KUMAR AGRICULTURAL ENGINEER	
P. K. PANDEY DIRECTOR	

Test report compiled by C. Veeranjanyulu, Senior Technician

21. APPLICANT'S COMMENTS

Para No.	Our reference	Applicant comments
21.1	19.1	We will provided.
21.2	19.2	Caution stacker will be implement.
21.3	19.3	We will improve hardness as per IS: 9813-2002 of blade
21.4	19.4	Beveling edge of cutting blade will be provided.