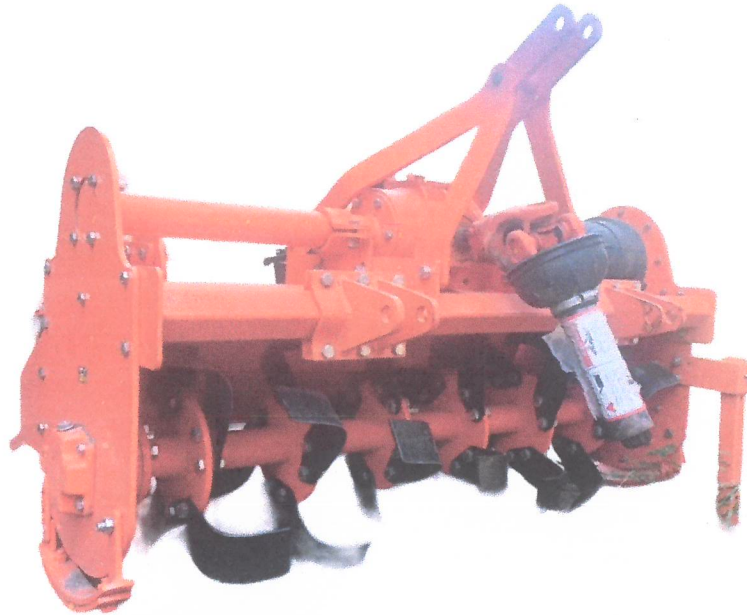


प्रारंभिक व्यावसायिक परीक्षण रिपोर्ट

संख्या/No. CSIR/CMERI/FMTTC/2024/058

INITIAL COMMERCIAL TEST REPORT माह/Month: OCTOBER, 2024

THIS TEST REPORT VALID UP TO : 30th SEPTEMBER, 2031



SONALIKA INDUSTRIES
(A Unit of International Cars & Motors Ltd.)
ROTAVATOR
(MODEL: MHM SL-120)



सत्यमेव जयते
Government Of India



कृषि मशीनरी प्रशिक्षण और परीक्षण केंद्र
Farm Machinery Training and Testing Centre
सीएसआईआर- केन्द्रीय यांत्रिक अभियांत्रिकी अनुसंधान संस्थान
CSIR - Central Mechanical Engineering Research Institute
महात्मा गांधी एवेन्यू, दुर्गापुर
Mahatma Gandhi Avenue, Durgapur
पश्चिम बंगाल - 713209
West Bengal - 713209
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E-mail: fmttc.cmeri@gmail.com

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3. TEST CODE / PROCEDURE

IS 4905-1968	: Methods for random sampling
IS: 6690-1981	: Specifications for blades for rotavator for power tillers (first revision)
IS: 4931-1995	: Agricultural tractors-Rear mounted power take off Type1,2 and 3
IS: 4468 (Part 1) – 1997	: Agricultural wheeled Tractors-Rear Mounted three point linkage: Part 1 Categories 1,2,3 and 4 (fourth revision)
IS : 11531-1981 (Reaffirmed)	: Test code for puddler
IS:17045- 2018	: Rotary tiller (Rotavator)- Tractor Driven- Test Procedure, and Recommendations on selected Performance Characteristics.
IS: 9253	: Agricultural tractor – Field performance and haulage tests- Guidelines

4. SPECIFICATION

4.1. General

Type of machine	: Rotavator
Make	: SONALIKA INDUSTRIES (A Unit of ICML)
Model	: MHM SL-120
Serial No.	: XQ371931
Name and Address of manufacturer	SONALIKA INDUSTRIES (A Unit of International Cars & Motors Ltd.) Village Chak Gujran, Jalandhar Road, Hoshiarpur, Punjab
Year of manufacture	: 2024
Country of origin	: INDIA
Type of blade	: L-TYPE
Working width, mm	: 1020
Recommended Prime mover size	: 25-30 hp

Report prepared by

Report verified by

[Signature]

Subrata kr Mandal

The Observations of field performance test are summarized in the ensuing table:

Summary of Field Performance Test

Sl. No.	Parameters/operations	Dry land operation			Wet land operation (Puddling)		
1	2	3			4		
1	Tractor used	VST SHAKTI			VST SHAKTI		
2	Gear used	L-2			L-2		
3	Type of soil (Refer IS:7926-1975)	Sandy loam			Sandy loam		
4	Bulk density of soil (g/cc)	1.65	to	1.80			
5	Average soil moisture (%)	6.35	to	11.20	-		
6	Average depth of standing water (cm)	-			5.50	to	8.20
7	Average speed of operation (kmph)	1.18	to	1.22	1.15	to	1.20
8	Avg. travel reduction /Avg. wheel slip (%)	-0.80	to	-3.85	-3.20	to	-4.30
9.	Average depth of puddle/ Average depth of cut (cm)	11.20	to	13.50	12.25	to	13.50
10	Avg. working width (cm)	115	to	118	118		
11	Field Capacity (ha/h)	0.14	to	0.15	0.14	to	0.15
12	Time required for one ha (h)	6.66	to	7.14	6.66	to	7.14
13	Field efficiency (%)	76.50	to	80.70	-		
14	Puddling index (%)	-			67.30	to	75.50
15	Fuel consumption.						
	l/h	3.50	to	4.20	3.80	to	4.25
	l/ha	23.31	to	29.98	25.30	to	30.34
16	Average PTO power (kW)	6.50	to	9.70	5.80	to	9.45

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12. CRITICAL TECHNICAL SPECIFICATIONS

(Vide Ministry's communication F. No. 9-1/2019 M&T (I&P) dated 20.08.2019)

Sr. No.	Parameters	Specification	Observation
1	Working width (mm)	1200 (Min.)	1200
2	Type of blade	C/L/J shape as per demand Hatchet Blade	L shape
3	Thickness of blade (mm)	7-8 (Min.)	7
4	No. of blades	30 (Min.)	36
5	Total number of flanges	5 (Min.)	6
6	Number of blades per flange	6 (Max.)	6
7	Outer Diameter of rotor shaft, mm	75-90	60.65
8	Rotor diameter, including flange and blade mounted on flange, mm	425 (Min.)	392
9	Side drive	Gear drive/chain drive (optional)	Gear drive
10	Depth control mechanism	Arc shaped skid on both side of rotavator	Provided
11	Material of blades	Boron (28MnCrB5)/High Carbon Steel of grade EN42/EN45/EN47	Boron steel
12	Hardness of blade material, HRC	38 (Min.)	54
13	Safety clutch/device (shear bolt) in PTO drive shaft	Must be provided	Provided
14	Rotavator stand	Must be provided	Provided
15	Guard over propeller shaft	Must be provided	Provided
16	Sheet metal	AS36/IS 2062	IS 2062
17	Marking/labeling of machine	The labeling plate should be riveted on the body of machine having Name and address of manufacturer, County of origin, Make, Model, Year of manufacture, Serial number, Type, Size, required size of prime mover (kW)	Provided
18	Literature	Operator manual, service manual and parts catalogue should be provided	Part Catalogue is provided

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13. COMMENTS AND RECOMMENDATIONS

- 13.1. NO ingress of dust and water/mud in primary and secondary reduction box and rotary axle bearing cap was observed.
- 13.2. Parking stand and safety device are provided
- 13.3. The implement hitch specifications confirm partially as per IS standard. Corrective action needs to be taken at production end.

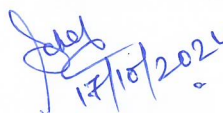
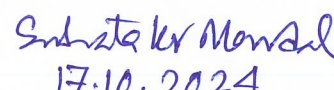

14. TECHNICAL LITERATURE

The following literatures are provided by the applicant during the test along with the application form.

- a) User's manual book
- b) Parts' catalogue
- c) Service manual

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

TESTING AUTHORITY

Report Prepared by	Sr. Technical Officer, CSIR-CMERI Farm Machinery Testing Centre	 17/10/2024
Report Verified & Approved by	In-Charge, CSIR-CMERI Farm Machinery Testing Centre	 17.10.2024
Report Approved for release by	Head, Business Development Unit, CSIR-CMERI, Durgapur	 17/10/24

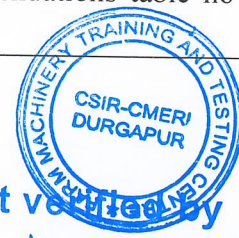
15. APPLICANT'S COMMENTS

Para No.	Our Reference	Applicants Comments
15	13.1 to 13.3	Agreed for comments and recommendations table no 13.1,13.2 & 13.3



Report prepared by





Report verified by

