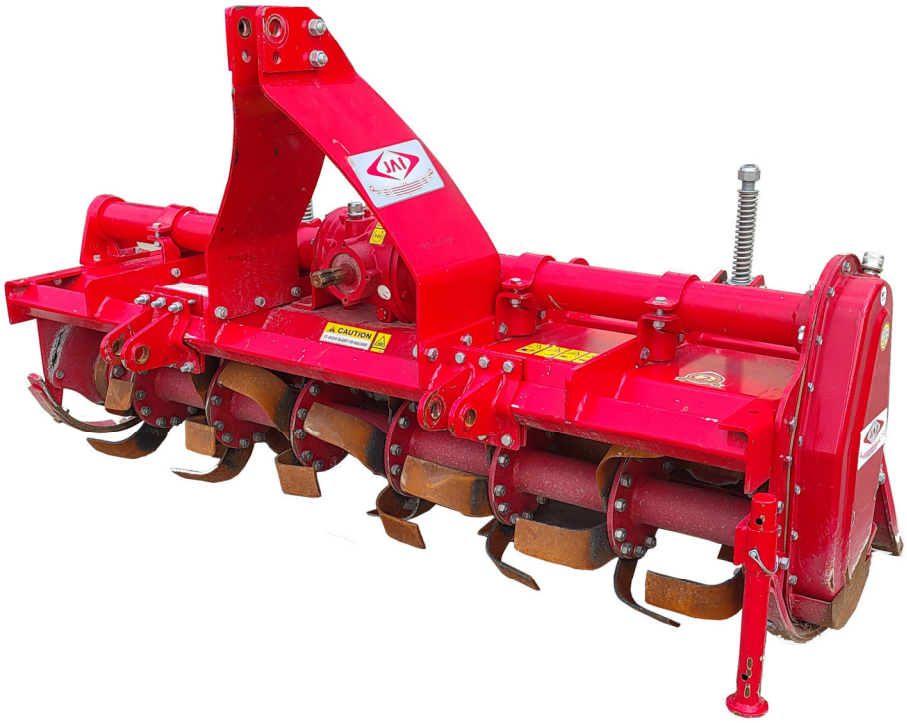
व्यावसायिक परीक्षण रिपोर्ट | संख्या/ **No.: ROTAVATOR- 373/2879/2022**

COMMERCIAL TEST REPORT | माह/**Month: August, 2022**

THIS TEST REPORT VALID UP TO : 31st August, 2029



JAMNA, JAIKSSR-5
ROTARY TILLER (ROTAVATOR)
TRACTOR MOUNTED

सत्यमेव जयते

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

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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6. FIELD PERFORMANCE TEST

The field tests of the rotavator comprising of dry land and wet land operations were conducted for 25.67 and 10.17 hours respectively to assess the performance test which is reported in **Annexure-I & II** for dry land and wet land operation, respectively.
Observations of field performance test is summarized in the ensuing table:-

Summary of Field Performance Test

Sl. No.	Parameters/operations	Dry land operation	Wet land operation (Puddling)
I	**II**	**III**	**IV**
1.	Tractor used	Swaraj 735 FE	
2.	Gear used	L-1	L-1
3.	Type of soil	Sandy loam	
4.	Average soil moisture (%)	15.5 to 17.00	--
5.	Average depth of standing water (cm)	--	13.80 to 15.00
6.	Bulk density of soil (g/cc)	1.54 to 1.69	--
7.	Average speed of operation (kmph)	2.00 to 2.62	2.04 to 2.15
8.	Avg. travel reduction (%)	--	1.57 to 1.62
9.	Avg. wheel slip (%)	-0.51 to -2.50	--
10.	Average depth of puddle (cm)	--	15.40 to 17.00
11.	Average depth of cut (cm)	10.08 to 10.46	--
12.	Avg. effective width (cm)	130 to 134	--
13.	Area covered (ha/h)	0.207 to 0.249	--
14.	Time required for one ha (h)	4.02 to 4.83	--
15.	Field efficiency (%)	76.95 to 87.64	--
16.	Puddling index (%)	--	78.84 to 80.92
17.	Fuel consumption		
	l/h	3.80 to 4.27	3.10 to 3.25
	l/ha	15.28 to 20.62	--
18.	Avg. PTO power consumption, kW	13.86	--

6.1 Dry land operation

6.1.1 Rate of work

i) The rate of work was recorded 0.207 to 0.249 ha/h, and the speed of operation varied from 2.00 to 2.62 kmph.

ii) The time required to cover one hectare was recorded as 4.02 to 4.83 h

6.1.2 Quality of work

i) The depth of operation was recorded as 10.08 to 10.46 cm.

ii) Average effective width was observed as 130 to 134 cm.

iii) Field efficiency was observed as 76.95 to 87.64 %.

11. CRITICAL TECHNICAL SPECIFICATION

(Vide Ministry's communication No 13-9/2019 M &T (I&P) dated 26.04.2019)

Si. No	Parameters	Specification	Observed	Remarks
1.	Working width (mm)	1200 (Min.)	1515	Conforms
2.	Type of blade	C/L/J shape as per demand Hatchet blade	L-Shape	Conforms
3.	Thickness of blade (mm)	7-8 (Min.)	7.0	Conforms
4.	No. of blades	30(Min.)	36	Conforms
5.	Total Number of flanges	5 (Min.)	07	Conforms
6.	Number of blades per flanges	6 (Max.)	06/03	Conforms
7.	Outer diameter of rotor shaft mm	75-90	90	Conforms
8.	Rotor diameter, including flange and blade mounted on flange, mm	425 (Min.)	450	Conforms
9.	Side Drive	Gear Drive /Chain Drive (Optional)	Gear drive	Conforms
10.	Depth control mechanism	Arc shaped skid on both side of rotavator	Skid on both Side of rotavator	Conforms
11.	Material of blades	Boron 27/28/30 Mn (28MnCrB5) / High Carbon steel of grade EN42/EN45/EN47	Boron 28MnCrB5	Conforms
12.	Hardness of blade Material, HRC	38 (Min.)	53.87	Conforms
13.	Safety clutch/Device (Shear bolt) in PTO drive shaft	Must be provided	Provided	Conforms
14.	Rotavator stand	Must be provided	Provided	Conforms
15.	Guard over propeller shaft	Must be provided	Provided	Conforms
16.	Sheet metal	AS36 / IS : 2062	IS:2862	Conforms

17.	Marking/labeling of machine	The labeling plate should be riveted on the body of machine having Name and address of manufacturer, Country of Origin, Make, Model, Year of manufacturer, Serial Number, Type, size, required of prime mover (kW)	Provided	Conforms
18.	Literature	Operator manual, Service manual and Parts catalogue should be provided.	Provided	Conforms

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.

12. COMMENTS AND RECOMMENDATIONS

12.1 The Dimension of PIC of Implement does not conform, in toto, to the requirements of IS: 4931-1995 and therefore, it may be looked into for corrective action.

12.2 Technical Literature:

One booklet entitled "Operator manual, service manual cum parts catalogue" was provided for reference during test. The same, however, needs to be updated as per IS:8132-1999.

TESTING AUTHORITY

Er. SANJAY KUMAR AGRICULTURAL ENGINEER	
Dr. MUKESH JAIN **DIRECTOR**	18.08.2022

The test report is compiled by Er. Dharmendra Kumar, Technical Assistant

13. APPLICANT'S COMMENTS

Para no.	Our reference	Applicants comments
13.1	12.1	The dimension of PIC will be taking care in our regular production.