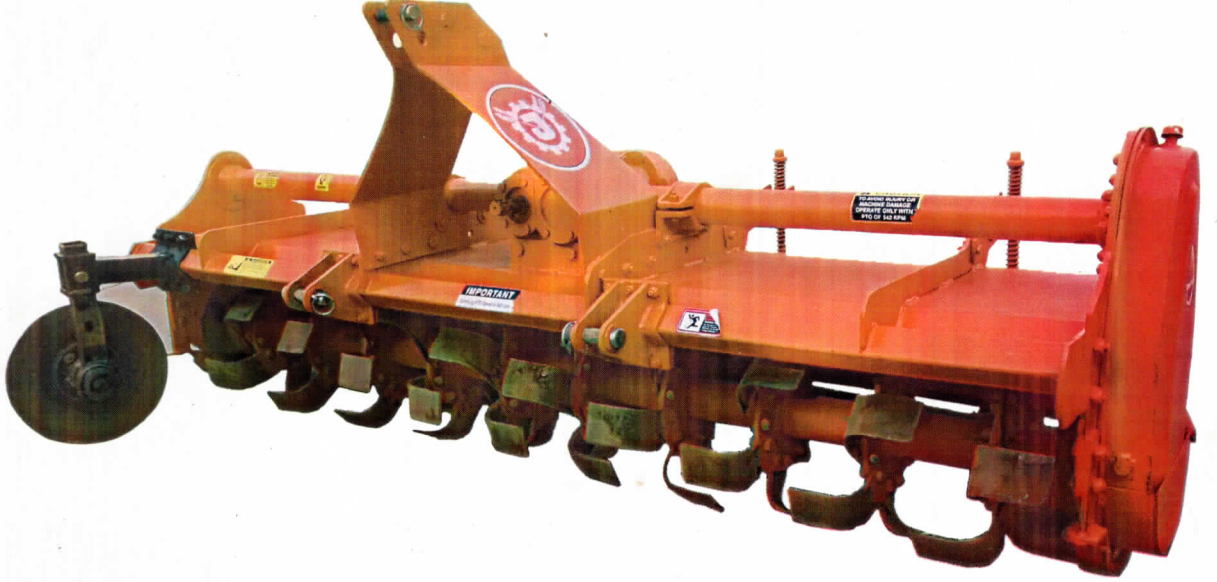


व्यावसायिक परीक्षण रिपोर्ट
COMMERCIAL TEST REPORT

संख्या/ No.: ROTAVATOR-325/2617/2020
माह/Month: December, 2020

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



**JANTA 8 FEET, ROTAVATOR
(TRACTOR MOUNTED)**



सत्यमेव जयते
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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4.11 Lubricants:

Sl. No.	Particulars	As recommended by the manufacturer	As used during test
1	Primary Gear box	CL-140	Oil originally filled in the rotavator was not changed
2	Secondary Gear box	CL-140	
3	Rotor Hub	Not specified	M.P. Grease
4	Propeller Shaft	Not specified	

5. RUNNING – IN

Rotavator was run in for 1.25 hour before field performance test.

6. LABORATORY TEST**6.1 Hardness:** - The surface hardness of blade was recorded as under: -

Description	As per IS: 6690:1981 (HRC)	Hardness as observed (HRC)	Remarks
Edge portion	53 to 59	44	Does not conform
On shank portion	37 to 45	44	Conforms

6.2 Chemical composition

The chemical composition of blades is tabulated as under:-

Constituents	As per IS: 6690-1981		Composition as observed (% of weight)	Remarks
	Carbon Steel	Silicon Manganese steel		
Carbon (C)	0.70 -0.85	0.50-0.60	0.2258	Does not conform
Silicon (Si)	0.10 -0.40	1.50-2.00	0.3658	Conforms to carbon steel
Manganese (Mn)	0.50 -1.0	0.50-1.00	1.1006	Does not conform
Sulphur (S)	0.05(max)	0.05(max)	0.0457	Conforms
Phosphorous (P)	0.05(max)	0.05(max)	0.0226	Conforms

7. FIELD PERFORMANCE TEST

The field tests of the rotavator comprising of dry land and wet land operation were conducted for 27 and 10 hours respectively to assess the performance test 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:-

7.3 Labour requirement

In all, two skilled operators are needed to ensure continuous operation of rotavator for day long period.

7.4 Wear analysis (on mass basis)

Wear of hatchet blades (on mass basis) was measured and recorded in ensuing table:

Percentage wear of rotavator blades on mass basis

Sl. No.	Initial mass of blade (g)	Mass of blade after 39.09 hr. of operation (g)	Difference of weight (g)	Percentage of wear (%) after 39.09 hr.	Percentage of wear on hour basis (%)
1.	1075.2	1059.6	15.6	1.45	0.04
2.	1047.7	1026.1	21.6	2.06	0.05
3.	1067.1	1050.7	16.4	1.54	0.04
4.	1145.6	1130.9	14.7	1.28	0.03
5.	1074.2	1056.8	17.4	1.62	0.04
6.	1109.4	1094.6	14.8	1.33	0.03
7.	1078.2	1060.7	17.5	1.62	0.04
8.	1093.2	1075.2	18	1.65	0.04
9.	1102.1	1087.2	14.9	1.35	0.03
10.	1097.4	1082.8	14.6	1.33	0.03

8. EFFECTIVENESS OF SEALINGS

After completion of wet land operation for 10 hours, the rotavator was dismantled for checking the effectiveness of sealing provided against ingress of dust, and water/mud in various sub-assemblies/components. The observations are given in ensuing table:-

Sl. No.	Location	Whether ingress of mud and/or water was observed (Yes/No)
1.	Primary reduction gear box	No
2.	Secondary reduction gear box	No
3.	Rotor assembly (hub)	No

9. EASE OF OPERATION & ADJUSTMENTS

No noticeable difficulty was observed during the operation and adjustment of rotavator.

10. DEFECTS, BREAKDOWN AND REPAIRS

No noticeable defect or breakdown was observed during the test.

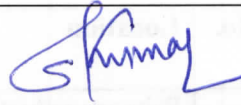

11. CRITICAL TECHNICAL SPECIFICATION

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

12. COMMENTS AND RECOMMENDATIONS

- 12.1 The Dimension of three point linkage of implement does not conform, in toto, to the requirements of IS: 4468(Part-1)-1997 and therefore, it may be looked into for corrective action.
- 12.2 The Dimensions 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.
- 12.3 The dimension of PIC Yoke Bore of implement does not conform, in toto, to the requirements of IS:4931-1995 and therefore, it may be looked into for corrective action.
- 12.4 Provision against overload on P.T.O drive shaft is not provided. It **MUST** be provided.
- 12.5 The grade of grease is not specified. It **MUST** be specified.
- 12.6 The stand is not provided. It **MUST** be provided.
- 12.7 The hardness of blades does not conform, in toto, to the requirements of IS: 6690-1981. This needs to be looked into for corrective action.
- 12.8 The chemical composition of blades does not conform, in toto, to the requirements of IS: 6690-1981. This needs to be looked into for corrective action.
- 12.9 The observed model – JANTA-8F as per labeling plate against model – 8 feet as per application. It **MUST** be looked into for corrective action.
- 12.10 **Technical Literature:**
No technical literature provided by the applicant during the test. The following literature, therefore, **MUST** be provided as per IS: 8132-1999 for guidance of users.
- (i) Operator's manual
 - (ii) Service Manual
 - (iii) Part's catalog

TESTING AUTHORITY

SANJAY KUMAR AGRICULTURAL ENGINEER	
P. K. PANDEY DIRECTOR	

Draft test report compiled by Girdhari Lal, Technician

13. APPLICANT'S COMMENTS

No comment's received from the applicant.