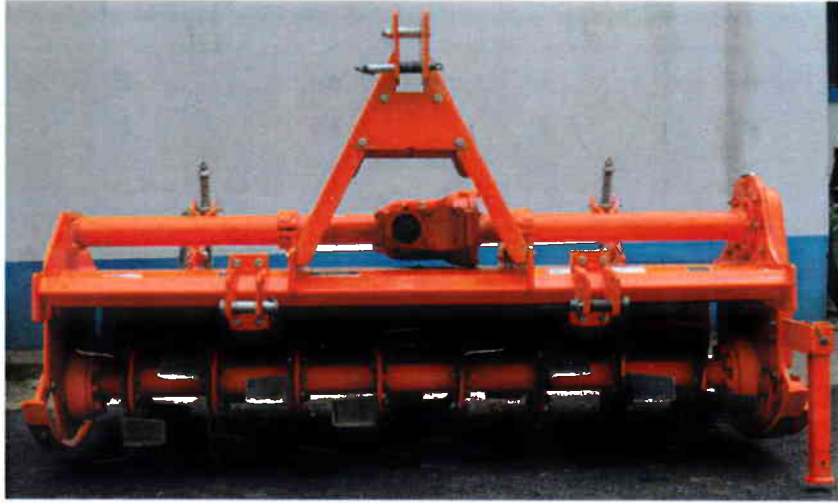




THIS TEST REPORT IS VALID UPTO 31/03/2027



**SHAKTIMAN ROTARY TILLER (ROTAVATOR)
MODEL: SRT-5.5(170)/MS GD Light Series
CENTRALLY MOUNTED, GEAR DRIVE, MULTI SPEED**



भारत सरकार
GOVT OF INDIA

कृषि एवं किसान कल्याण मन्त्रालय

MINISTRY OF AGRICULTURE & FARMERS WELFARE

कृषि, सहकारिता एवं किसान कल्याण विभाग

DEPARTMENT OF AGRICULTURE, COOPERATION & FARMERS WELFARE

उत्तर पूर्वी क्षेत्र कृषि यंत्र प्रशिक्षण एवं परीक्षण संस्थान

NORTH EASTERN REGION FARM MACHINERY TRAINING & TESTING INSTITUTE

विश्वनाथचारिआलि, जिला-विश्वनाथ(असम)

BISWANATH CHARIALI: BISWANATH: ASSAM, PIN - 784 176

[AN ISO 9001:2015 CERTIFIED INSTITUTION]

Ph. No. 03715-222094

Website: <http://nerfmtti.nic.in>

Fax No: 03715-230358

E-Mail: fmti-ner@nic.in

1.SCOPE OF TEST

The scope of test was to check and assess the following:

1.1 Laboratory Test:

- a) Checking of specifications
- b) Hardness of soil engaging parts, blades of Rotary tiller (Rotavator).
- c) Chemical analysis of critical components, blades of Rotary tiller (Rotavator).
- d) Wear analysis of critical components, blades of Rotary tiller (Rotavator).

1.2 Field Test :

- a) Rate of work
- b) Quality of work
- c) Ease of operation and adjustments
- d) Labour requirement
- e) Defects, Breakdowns & Repairs.

2. METHOD OF SELECTION

The test sample was selected by the testing authority through random selection. The following test sample were presented by the applicant during the random selection at manufacturer's site.

Sl. No	Serial no of test sample	Remarks
1	ADBJ101178717	Out of 05 samples, S. No. 01 has been randomly selected.
2	ADBJ101178715	
3	ADBJ101178719	
4	APBJ101178710	
5	AEBI101136713	

3. TEST PROCEDURE

IS: 17045 : 2018 : Rotary Tiller (Rotavator) – Tractor Driven – Test Procedure, and Recommendation on Selected Performance Characteristics

4. SPECIFICATIONS**4.1 General:**

Name and address of the manufacturer : **M/s TIRTH AGRO TECHNOLOGY PVT. LTD.**
"SHAKTIMAN" Survey No-108/1 Plot No-B.NH-27, Nr Bharudi Toll Plaza, Bhunava (Village), Taluka: Gondal, Dist:Rajkot, State:Gujarat INDIA-360 311

Name & Address of Applicant : **M/s TIRTH AGRO TECHNOLOGY PVT. LTD.**
"SHAKTIMAN" Survey No-108/1 Plot No-B.NH-27, NrBharudi Toll Plaza, Bhunava (Village), Taluka: Gondal, Dist:Rajkot, State:Gujarat INDIA-360 311

Name of machine : Rotary Tiller (Rotavator)
 Type : Centrally Mounted, Gear Drive, Multi speed
 Make : M/s TIRTH AGRO TECHNOLOGY PVT. LTD.
 Model : SRT-5.5(170)/MS GD Light Series
 Year of manufacture : 2018-19
 Serial Number : ADBJ101178717
 Recommended power source, hp : 35 - 50 (As per Applicant)
 Type of blade : Hatchet(L-Shaped)
 Size (cm) {Rotor Dia. x Working width} : 46.0 Φ x 160.0

4.2 Prime Mover Used:

Tractor : Swaraj 855FE
 Chassis No./ Engine no. : WRCM61605178805
 Max. PTO Power, kW (Ps) : 33.6 (45.68)

4.3 Constructional Details (Refer Fig.1) :

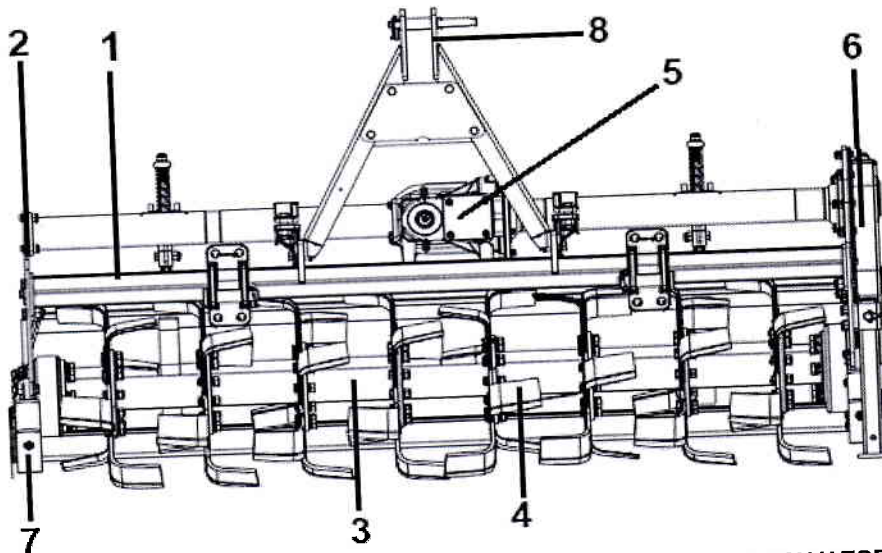


Fig.1: SHAKTIMAN SRT-5.5(170) MS GD Light Series ROTARY TILLER (ROTAVATOR)

KEYWORDS:

- | | |
|----------------|---------------------------------|
| 1. Mainframe | 5. Primary reduction gear box |
| 2. Side plate | 6. Secondary reduction gear box |
| 3. Rotor shaft | 7. Skid |
| 4. Rotor blade | 8. Hitch pyramid |

4.3.1 Main Frame:

Type : Fabricated from MS sheet, MS square pipe and M.S Plate.
 Size of box section, (mm) : 1685 x 50.70 x 60.0
 Size of supporting flat, (mm) {R.H.S and L.H.S} : 575 x 110 x 8.25 and 575 x 110 x 8.25
 Type of mounting of box section : 2 Nos. of MS flat bolted with the help of 04 Nos. of bolts & nuts over each side.

1	2	3	4	5	6	7
v	Country of origin	Evaluative	Should be provided on rotary tiller (Rotavator)	--	India	Yes
vi	Year of manufacture			--	Provided	Yes
vii	Chassis Serial Number			--	Provided	Yes
viii	Recommended PTO speed of Prime mover(rpm)			--	Provided	Yes
ix	Maximum PTO power requirement, kW			--	Provided	Yes
8	Category of breakdowns/ defects					
	Category of breakdowns	Category Evaluative/ Non Evaluative	Requirements	As Observed	Whether meets the requirements (Yes/ No)	
i	Critical breakdowns	Evaluative	No critical breakdown	None	Yes	
ii	Major breakdown	Evaluative	Not more than one and neither of them should be repetitive in nature.	None	Yes	
iii	Minor breakdowns	Evaluative	Not more than three and frequency of each should not be more than two.	None	Yes	
iv	Total breakdowns	Evaluative	In no case, the total no of breakdown should exceed four, i.e. (1 major + 3 minor) or 4 minor breakdowns	None	Yes	

11. COMMENTS AND RECOMMENDATIONS

- 11.1** Dimensions of PIC of implement does not conform to IS: 4931-1995 and it should be looked into for corrective action.
- 11.2** Chemical composition of rotor blades does not conform to IS: 6690-2002. The percentage of carbon and manganese content in composition of rotary tiller blade material was recorded as 0.295 and 1.317 respectively. The carbon content was on lower side and manganese content was on higher side when compared with the relevant Indian Standard. Moreover, the hardness of Edge portion of rotor blades also does not conform to relevant Indian Standard. It is therefore, recommended that the material of rotary tiller blade should be improved and shall be provided as per requirement of Indian Standard.
- 11.3** In dry land operation average depth of cut was recorded as 9.66 cm which does not meet the requirement of Indian Standard.

11.4 Technical literature:

Operator cum Service Manual & Parts Catalogue was provided along with the machine during the course of testing. It is further recommended to bring out these manuals in hindi and other vernacular languages as per IS: 8132-1999

TESTING AUTHORITY


(KHAGENDRA BORA)
SENIOR TECHNICAL ASSISTANT



(J.P. MANDAL)
SENIOR AGRICULTURAL ENGINEER



(K.K. NAGLE)
DIRECTOR

Draft test report compiled by - **Shri Khagendra Bora, STA**

12. APPLICANT'S COMMENTS

Para No	Our Reference	Applicants Comments
12.1	11.1	The dimension of PIC of implements will be modified to confirm IS 4931-1995.
12.2	11.2	Shaktiman Rotary Tiller blade are made of "BORON" steel which is better than Carbon & Silicon Manganese steel Referred in IS 6690-2002. Chemical compositions and Hardness of Rotavator Blade are maintaining as per "BORON" steel.
12.3	11.3	We will take necessary action for increase of depth of operation.
12.4	11.4	We will take corrective action on this observation.