

प्रारंभिक व्यावसायिक परीक्षण रिपोर्ट

**INITIAL COMMERCIAL TEST REPORT**

**THIS TEST REPORT VALID UP TO**

:

संख्या/No. CSIR/CMERI/FMTTC/2024/023

माह/Month: June, 2024

**31<sup>st</sup> MAY, 2031**



**SONALIKA INDUSTRIES**

(A Unit of International Cars & Motors Ltd.)

**ROTAVATOR**

**(MODEL: SLHSSSR - 1.20)**



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

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|                           |                                                                                                                            |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------|
| CSIR/CMERI/FMTTC/2024/023 | SONALIKA INDUSTRIES<br>(A Unit of International Cars & Motors Ltd.)<br>ROTAVATOR SLHSSSR-1.20<br>(INITIAL COMMERCIAL TEST) |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------|

**Name of Machine** : Rotavator  
**Type** : Tractor Mounted  
**Make** : SONALIKA INDUSTRIES  
(A Unit of International Cars & Motors Ltd.)  
**Model** : SLHSSSR-1.20  
SONALIKA INDUSTRIES  
**Name and address of Manufacturer** : (A Unit of International Cars & Motors Ltd.)  
Village Chak Gujran, Jalandhar Road,  
Hoshiarpur -146022 (Punjab) INDIA  
**Name and address of Applicant** : SONALIKA INDUSTRIES  
(A Unit of International Cars & Motors Ltd.)  
Village Chak Gujran, Jalandhar Road,  
Hoshiarpur -146022 (Punjab) INDIA  
**Test Conducted at** : Farm Machinery Training and Testing  
Center, CSIR – Central Mechanical  
Engineering Research Institute, M.G.  
Avenue, Durgapur- 713209, West Bengal,  
INDIA, & CMERI-Centre of Excellence for  
Farm Machinery, Near GNE College, Gill  
Road, Ludhiana - 141006, Punjab, INDIA



**THIS TEST REPORT VALID UP TO : 31<sup>ST</sup> MAY 2031**  
[vide DAC&FW OM No. 13-22/2020-M&T (I&P) dated 12.12.2023]

Report No.: CSIR/CMERI/FMTTC/2024/023

Month: June

Year: 2024

**CSIR - Central Mechanical Engineering Research Institute,**  
**Durgapur - 713209**  
**(W.B.), INDIA**

Farm Machinery Training and Testing Centre,  
CSIR-Central Mechanical Engineering Research Institute, Durgapur  
**THIS REPORT IS VALID UPTO: 31<sup>ST</sup> MAY 2031**

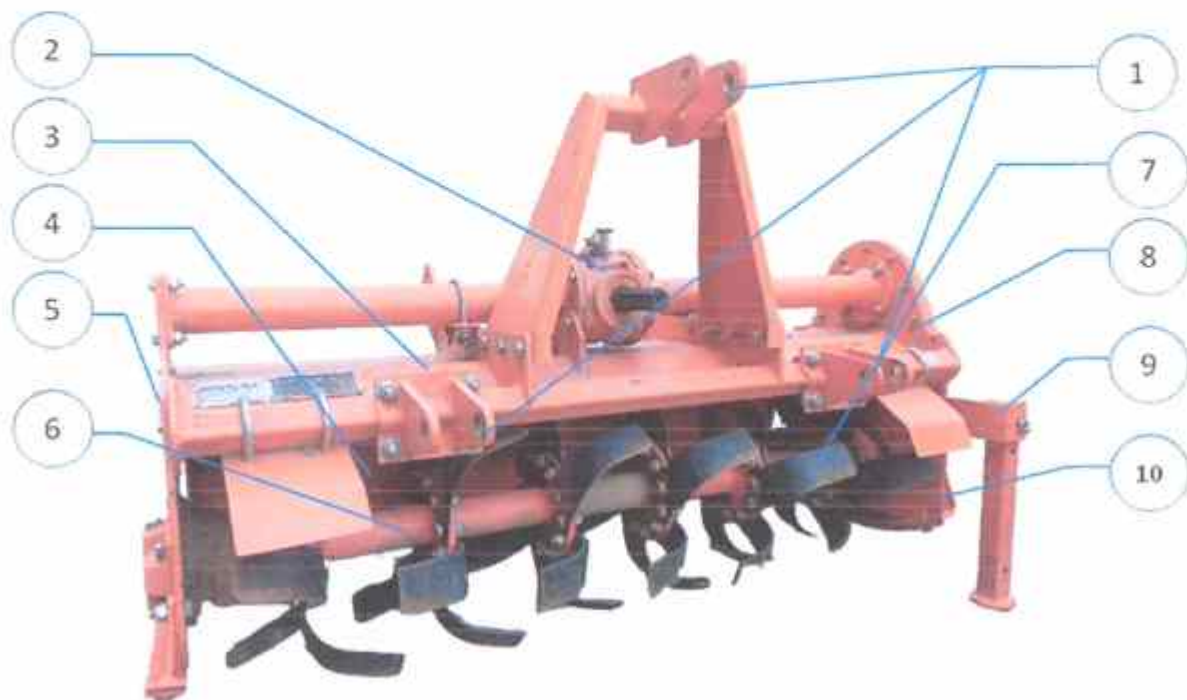
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Report prepared by

*[Signature]*

Report verified by

*[Signature]*



*Fig. 2 Rotavator*

#### 4.3. Constructional details (Refer Fig. )

- |                        |                               |
|------------------------|-------------------------------|
| 1. Three point linkage | 2. Primary reduction gear box |
| 3. Main frame          | 4. Trailing board             |
| 5. Side plate          | 6. Rotor shaft                |
| 7. Rotor Blade         | 8. Secondary drive gear box   |
| 9. Rotavator stand     | 10. Adjusting rack            |

##### 4.3.1. Main frame

|                                 |   |                                                |
|---------------------------------|---|------------------------------------------------|
| Type                            | : | Fabricated from M. S square pipe and M.S plate |
| Size of Square section (mm)     | : | 1250 x 40 x 40 (Length x cross section area)   |
| Size of supporting flat (mm)    | : | 01 Nos. on each side (395x 100x 6)             |
| Type of mounting of box section | : | Bolt and nut LHS and RHS                       |

##### 4.3.2. Side Plates

|                         |   |                                                                        |
|-------------------------|---|------------------------------------------------------------------------|
| Type                    | : | M.S. Sheet                                                             |
| Thickness of plate (mm) | : | 8.00                                                                   |
| Material                | : | M.S Sheet                                                              |
| Method of fixing        | : | Fixed to the main frame with the help of 04 Nos. bolt&nut on LHS & RHS |

|                           |                                                                                                                                                            |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CSIR/CMERI/FMTTC/2024/023 | <b>SONALIKA INDUSTRIES</b><br><b>(A Unit of International Cars &amp; Motors Ltd.)</b><br><b>ROTAVATOR SLHSSSR-1.20</b><br><b>(INITIAL COMMERCIAL TEST)</b> |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|

**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                                                                                                                                                                               | C shape                    |
| 3       | Thickness of blade (mm)                                          | 7-8 (Min.)                                                                                                                                                                                                            | 6.52                       |
| 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 |



### 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,

- User's manual book
- Parts' catalogue
- Service manual

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



### TESTING AUTHORITY

|                                |                                                                    |                                  |
|--------------------------------|--------------------------------------------------------------------|----------------------------------|
| Report Verified by             | CSIR-CMERI Farm Machinery Testing Centre                           | <i>[Signature]</i><br>25/06/2024 |
| Report Approved by             | In-Charge,<br>CSIR-CMERI Farm Machinery Testing Centre             | <i>[Signature]</i><br>25.06.2024 |
| Report Approved for release by | Head, Business Innovation and Skill Group,<br>CSIR-CMERI, Durgapur | <i>[Signature]</i><br>25/6/24    |

### 15. APPLICANT'S COMMENTS

| Para No. | Our Reference | Applicant's Comments                                                          |
|----------|---------------|-------------------------------------------------------------------------------|
| 15       | 13.3          | The implements of hitch specification will be improve at ender/production end |