





**SWAN NSE-RT200 ROTAVATOR (Tractor Operated)**



सत्यमेव जयते

**भारत सरकार**

**GOVERNMENT OF INDIA**

**कृषि मन्त्रालय**

**MINISTRY OF AGRICULTURE**

**(कृषि एवं सहकारिता विभाग)**

**(DEPARTMENT OF AGRICULTURE AND CO-OPERATION)**

**उत्तर पूर्वी क्षेत्र कृषि यन्त्र प्रशिक्षण एवं परीक्षण संस्थान**

**NORTH EASTERN REGION FARM MACHINERY TRAINING AND TESTING INSTITUTE**

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## 1 SCOPE OF TEST

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

### 1.1 LABORATORY TEST:

- Checking of specifications
- Hardness of soil engaging parts (Rotavator blades)
- Chemical analysis of critical components (Rotavator blades)
- Wear analysis of critical components

### 1.2 FIELD TEST:

- Rate of work.
- Quality of work
- Ease of operation, maintenance and adjustments
- Labour requirement
- Defects, Breakdowns & Repairs

## 2 METHOD OF SELECTION

The implement was directly submitted for test by the applicant at this Institute.

## 3 TEST PROCEDURES

- i) IS: 6690-1981: Specification for Blades for rotavator for power tillers. (Reaffirmed in 2007)
- ii) IS: 4931-1995 – Agricultural tractors-Rear Mounted PTO. (Reaffirmed in 2009)
- iii) IS: 4468 – 1997 (Pt-1) Agricultural wheeled Tractors- Rear Mounted three point linkage. (Reaffirmed in 2007)
- iv) IS: 11531-1985 Test code for puddler. (Reaffirmed in 2006)

## 4 SPECIFICATIONS

### 4.1 General:

Manufacturer	: M/s New Swan Enterprises (Agro Tech Division), C-213, Phase VIII Focal Point, Ludhiana (Punjab) 141 010
Name of machine	: Rotavator (Tractor Operated)
Type	: Gear type
Make	: SWAN
Model	: NSE-RT200
Serial number	: <b>Not specified</b>
Year of manufacture	: 2009 (apa)
Type of blade	: Hatchet (L – type)
Working width of implement (mm)	: 1980
Power source as recommended	: 40 to 60 HP



### 10. DEFECTS, BREAKDOWNS AND REPAIRS

The crack on the propeller shaft of the rotavator was observed after 11.25 working hrs and it becomes broken at universal joint after 32.01 working hrs. It was replaced with new propeller shaft.

### 11. COMMENTS AND RECOMMENDATIONS

- 11.1 The specifications of implement hitch does not conform to the IS: 4468 (Pt-I)-1997. Hence, it is recommended that it should be provided with implement according to conformity with relevance to Indian Standard.
- 11.2 The dimensions of splined end pinion shaft and propeller shaft insert dimensions does not conform to IS: 4931-2004. This should be provided according to relevant IS.
- 11.3 The viscosity of oil used in gear boxes of rotavator should be given in literature and suitable such sticker should also be pasted on rotavator. It is also recommended that type of lubricant used in gear boxes should be recommended with its specific grade and its servicing period.
- 11.4 It is recommended to have provision of change in rotor speed to suit wider range of soil and soil moisture condition.
- 11.5 The marking or labeling plate is not provided with implement. Hence, particulars like make, model, year of manufacture, size and recommended power should be stamped, engrossed or embossed on metallic plate rigidly attached or visited on a non-wearing part of the implement.
- 11.6 The make of rotavator on implement is given as Swan, however make of rotavator on specification and application is given as Swan/New Swan. This may be looked into and correct make may be given on rotavator implant during mass production.

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### 12. APPLICANT'S COMMENTS

Para No.	Our Reference	Applicant's comments
12.1	11.1	<p>a - Linch pin hole diameter has now been modified to 12.0 + 0.2 mm</p> <p>b- Diameter of hitch pin hole has now been modified.</p> <p>c- Width between outer face of yoke has now been modified</p> <p>d- Diameter of hitch pin has now been modified</p>
12.2	11.2	<p>a- D<math>\phi</math> of propeller shaft insert dimension (refer to fig. 5 of this report) has now been modified to 34.93 <math>\pm</math> 0.03 mm</p> <p>b- W of propeller shaft insert dimension (refer to fig. 5 of this report) has now been modified to 8.69 mm</p>
12.3	11.4 and 11.5	Suggestions have now been implemented
12.4	11.6	We clarify that the make of rotavator is SWAN.

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