

व्यावसायिक परीक्षण रिपोर्ट
COMMERCIAL TEST REPORT

संख्या / No. : Imp. 84/124
माह / Month : March, 2011



Landking Rotavator Model: 500 (Tractor – Mounted)



सत्यमेव जयते

भारत सरकार
GOVT OF INDIA

कृषि मन्त्रालय

MINISTRY OF AGRICULTURE

कृषि एवं सहकारिता विभाग

DEPARTMENT OF AGRICULTURE AND COOPERATION

उत्तर पूर्वी क्षेत्र कृषि यंत्र प्रशिक्षण एवं परीक्षण संस्थान

NORTH EASTERN REGION FARM MACHINERY TRAINING & 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 by the applicant for test at this Institute, hence method of selection is not known.

3 TEST PROCEDURES

- i) IS: 6690-2002: Specification for blades for rotavator for power tillers.
- ii) IS: 4931-2004 – Agricultural tractors-Rear Mounted PTO.
- iii) IS: 4468 – 1997 (Pt-I) Agricultural wheeled Tractors- Rear Mounted three point linkage.
- iv) IS: 11531-2001 Test code for puddler.

4 SPECIFICATIONS

4.1 General:

Manufacturer

: M/s A.T.Fluid Power Pvt. Ltd.
Lodhika GIDC, Plot No.2711-A+B,
Kalawad Road,
At: Vajadi- Vad,
Distt. Rajkot

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9 EASE OF OPERATION & ADJUSTMENTS

- 9.1 The propeller shaft has two telescopic sections, to shorten or lengthen the drive shaft.
- 9.2 Depth adjustment can be made by raising or lowering the skids.
- 9.3 The propeller shaft is provided with shear bolt for safety during overload.
- 9.4 Implement does not have provisions to vary rotor shaft speed to cater to different soil and moisture conditions.
- 9.5 Grease nipples are not provided on the universal joints of propeller shaft.
- 9.6 Dipstick is not provided on the primary reduction gearbox for checking the level of lubricant.

10. DEFECTS, BREAKDOWNS AND REPAIRS

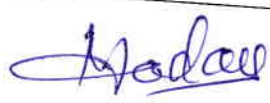
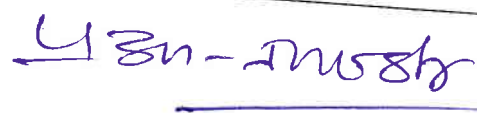

- 10.1 Oil leakage was observed from the oil filling cap of secondary reduction gear box after 27.22 hours of operation.
- 10.2 One rotor blade was found broken after completion of 22.84 h of dry land rotavation.
- 10.3 Oil seal at LHS rotor hub was found damaged after completion of 33.72 h of field operation. The same was replaced with the new one.
- 10.4 Outer end of propeller shaft was broken after 42.24 h of operation. Welding of the same was got done.

11. COMMENTS AND RECOMMENDATIONS

- 11.1 The specifications of implement hitch does not conforms to the IS: 4468 (Pt-I)-1997. Hence, it is recommended that implement should be provided with the hitch conforming to relevant 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 looked into for corrective action.
- 11.3 Oil leakage was observed from the oil filling cap of secondary reduction gear box, and hence should be looked into for corrective action.
- 11.4 The grade and change period of oil used in gear boxes of rotavator, should be given in the printed literature and suitable sticker should also be pasted on rotavator.

- 11.5 Grease nipples are not provided on the universal joints of propeller shaft. This should be looked into for corrective action.
- 11.6 No dipstick has been provided on the primary reduction gear box for checking the level of oil there into. This needs to be looked into for appropriate action.
- 11.7 Hardness of rotor blades does not conform to relevant Indian Standards. This needs to be looked into for corrective action.
- 11.8 It is recommended that arrangement for changing the rotor speed to suit various soil and moisture condition should be provided.
- 11.9 Serial number, year of manufacture, size etc. should properly be indicated on the labeling plate.
- 11.10 **Adequacy of literature:** It is recommended that operator's manual, service manual and spare parts catalogue should be provided in English, Hindi and other regional languages as per IS: 8132-2004.

TESTING AUTHORITY

H. L. YADAV AGRICULTURAL ENGINEER	
P. K. PANDEY SENIOR TEST ENGINEER	
M. K. VISHWAKARMA DIRECTOR	

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12. APPLICANT'S COMMENTS

We have noted your testing results and comments and recommendations. We shall amend the necessary manufacturing items like linch pin, and such, and incorporate the necessary modifications and changes for the production. We will do the necessary changes in the labels as suggested. We will also get the manuals printed with adequate information as suggested. We shall conform to the standards as required.