

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



**DEVIKRUPA INDUSTRIES, DEVIKRUPA 105 DI
RIDE ON SELF PROPELLED MULTI PURPOSE
TOOL BAR (SANEDO)**



भारत सरकार

Government of India

कृषि एवं किसान कल्याण मंत्रालय

Ministry of Agriculture and Farmers Welfare

कृषि एवं किसान कल्याण विभाग

Department of Agriculture and Farmers Welfare

उत्तरी क्षेत्र कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

Northern Region Farm Machinery Training and Testing Institute

ट्रैक्टर नगर, सिरसा रोड, हिसार, (हरियाणा) - 125 001

Tractor Nagar, Sirsa Road, HISAR (Haryana)-125 001

[ISO 9001:2015 CERTIFIED]

Website: <http://nrfmtti.gov.in/>

E-mail: fmti-nr@nic.in

Tele./FAX: 01662-276984

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15. RUNNING-IN

The Ride On Self Propelled Multi Tool Bar was run-in for 1.16 hour before field performance test. All the fasteners were checked and tightened thereafter

16 FIELD TEST

The field performance test under dry land condition was conducted with T-5 cultivator attachment for 11.16 hours at no load engine speed 3000 rpm and with flat blade attachment for 14.58 hours at the no load engine speed 3000 rpm. In all, 5 tests trials were conducted in black soil at the Moviya Gondal, Rajkot. The results of the field test for dry land operation is summarized in Table-8

Table 8: SUMMARY OF FIELD PERFORMANCE TEST

Sr. No.	Parameter		T-5 cultivator	Flat blade
i)	Type of soil	:	Black	Black
ii)	Soil moisture, %	:	14.2 to 17.2	14.9 to 15.6
iii)	Bulk density of soil, g/cc	:	1.55 to 1.69	1.58 to 1.63
iv)	Speed of operation, kmph	:	3.69 to 4.24	3.69 to 3.98
v)	Depth of cut, cm	:	5.73 to 6.13	5.20 to 6.27
vi)	Width of cut, m	:	1.02 to 1.04	1.02 to 1.04
vii)	Area covered, ha/h	:	0.282 to 0.378	0.300 to 0.334
viii)	Time required for one ha	:	2.65 to 3.55	2.99 to 3.33
ix)	Fuel consumption			
		l/h :	1.00 to 1.20	0.95 to 1.08
		l/ha :	2.65 to 4.26	3.16 to 3.23
x)	Field efficiency, %	:	75.00 to 86.50	78.13 to 80.68
xi)	Draft, kg	:	18.56 to 25.49	9.89 to 13.97

16.1 Field operation

16.1.1 Rate of work

- Time required to cover 1 ha range from 2.65 to 3.55 h/ha for cultivator and 2.29 to 3.33 h/ha for flat blade.
- The average area covered was recorded as 0.282 to 0.378 ha/h for cultivator and 0.300 to 0.334 ha/h for flat blade.

16.1.2 Quality of work

- The average depth of cut was recorded as 5.73 to 6.13 cm for cultivator and 5.20 to 6.27 cm for flat blade.
- The hourly fuel consumption was recorded as 1.00 to 1.20 l/h for cultivator and 0.95 to 1.08 l/h for flat blade and fuel required on 1 ha was recorded 2.65 to 4.26 l/ha for cultivator and 3.16 to 3.23 l/ha for flat blade.



18.6.2 Mass basis:

The wear of the Flat blade was measured after 14.58 h. of field operation and the observations are as under:

Sl. No.	Initial mass (g)	Mass after 14.25 hrs. (g)	Loss of mass (g)	Percent wear (%)	Percent wear per hour
1	2600.00	2580.00	20	0.77	0.05

19. COMMENTS & RECOMMENDATIONS**19.1 Mechanical vibration**

The amplitude of mechanical vibration marked as (*) on the relevant chapter, are on drastically higher side. It is not just directly concerned with operator's health, safety and comfort, but also adversely affect the useful life of the components. In view of above, this deserve to be given top priority for corrective action.

19.2 Spark arresting devices is not provided. It **MUST** be provided.

19.3 Valve guide and valve springs discard limit is not specified. It **MUST** be specified.

19.4 Valve guide clearance discard limit is not specified. It **MUST** be specified.

19.5 Field Test

19.5.1 Ride on self propelled multi-purpose tool bar was operated in varying field condition.

- The average depth of cut was recorded as 5.73 to 6.13 cm for cultivator and 5.20 to 6.27 cm for flat blade.
- The hourly fuel consumption was recorded as 1.00 to 1.20 l/h for cultivator and 0.95 to 1.08 l/h for flat blade and fuel required on 1 ha was recorded 2.65 to 4.26 l/ha for cultivator and 3.16 to 3.23 l/ha for flat blade.
- Time required to cover 1 ha range from 2.65 to 3.55 h/ha for cultivator and 2.29 to 3.33 h/ha for flat blade..
- The average area covered was recorded as 0.282 to 0.378 ha/h for cultivator and 0.300 to 0.334 ha/h for flat blade.

19.6 Overall, the performance was found to be satisfactory.


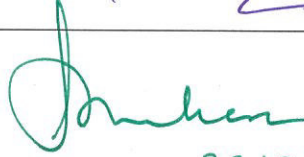
20. TECHNICAL LITERATURE

The following literatures were provided by the applicant during the test.

- a) Operator manual
- b) Parts catalogue
- c) Service manual

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

TESTING AUTHORITY

Er. SANJAY KUMAR AGRICULTURAL ENGINEER	
Dr. MUKESH JAIN DIRECTOR	 23.12.2022

Draft test report is compiled by Er. Dharmendra Kumar, Technical Assistant

21. APPLICANT'S COMMENTS

Para No.	Our Reference	Applicant's Comments
21.1	19.1	Design improvements will be taken up for further reduction in vibration.
21.2	19.2	Spark arresting device is provided as an optional fitment.
21.3	19.3	We informed to engine manufacturer's respective department for discard limit, the reply is that the stiffness discard limit is 1.204 kgf/mm (11.8 Nm/mm)
21.4	19.4	We informed to engine manufacturer's respective department for discard limit.
21.5	19.5	Land work, can be considered suitable as per average requirement and as per requirement is introduced as special purpose machine.

