

व्यावसायिक परीक्षण रिपोर्ट
COMMERCIAL TEST REPORT

संख्या/ No.: REAPER-17/3022/2023

माह/ Month: May, 2023

THIS TEST REPORT VALID UP TO : 31st May, 2029



**INDICON, IR-120
SELF PROPELLED REAPER (WALK BEHIND)**



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: fnti-nr@nic.in

Tele./FAX: 01662-276984

Page 1 of 27

10. AIR CLEANER OIL PULL OVER TEST

Range of atmospheric conditions:

Temperature (°C)	:	23 to 25
Pressure (kPa)	:	98.3 to 98.4
Relative humidity (%)	:	64.8 to 68.9
Mass of oil in the air cleaner assembly when fitted with recommended grade of oil 5% in excess than marked level (g)	:	67.83

	Position	Slope (degree)	Loss of oil (g)	Oil pull over (%)	Remarks if any
i)	Horizontal	--	0.40	0.16	NIL
ii)	Tilted longitudinally with front end up	15	0.40	0.16	
iii)	Tilted longitudinally with rear end up	15	0.20	0.08	
iv)	Tilted laterally with right side up	15	0.60	0.23	
v)	Tilted laterally with left side up	15	0.50	0.19	

11. FIELD TEST

The reaper was operated for 26.00 (excluding 1.25 hours running) for harvesting the paddy crop. During the test, SWARNA available variety of paddy was harvested to assess the performance of reaper with regard to quality of work, rate of work, fuel consumption, safety and soundness of construction. The crop and atmospheric conditions during field test are given in Annexure-I

The crop parameters recorded during the test with paddy crop are as given below.

Parameter	Paddy	
Plant height (cm)	80.67 to 86.33	
Plant population (Nos./m ²)	527.33 to 573.67	
Moisture (%)	Grain	15.9 to 16.9
	Straw	48.5 to 49.5

The results of field performance test are given in Annexure –II and are summarized in Table-2



Summary of field test: Table-2

S. No.	Observation	Paddy
1.	Forward speed (kmph)	1.71 to 1.77
2.	Area covered (ha/h)	0.137 to 0.161
3.	Width of cut (m)	1.15 to 1.17
4.	Fuel consumption	
		l/h
		l/ha
		0.62 to 0.74
		4.19 to 5.00
5.	Losses	
a)	Pre-harvest losses (kg/ha)	6.67 to 13.30
b)	Un-cut crop by cutter bar (kg/ha)	0 to 2.05
c)	Grain loss due to cutter bar unit, conveyor unit, handling unit etc. (kg/ha)	24.00 to 46.13
d)	Post harvest loss (kg/ha) (b+c)	24.58 to 46.13
6)	Stubble height (after harvesting)	10.67 to 12.00

11.1 Paddy Harvesting**11.1.2 Rate of work**

- i) The speed of harvesting ranged from 1.71 to 1.77 kmph during the test. The rate of work varied from 0.137 to 0.161 ha/h.
- ii) The fuel consumption varied from 0.62 to 0.74 l/h.
- iii) The fuel consumption per unit area harvested varied from 4.19 to 5.00 l/ha.

11.1.3 Quality of work

- i) During harvesting, grain losses due to cutter bar unit, conveyor unit, handling unit etc was observed from 24.00 to 46.13 kg/ha.
- ii) Post harvest losses were observed form 24.58 to 46.13 kg/ha

11.2 Ease of operation and safety provisions:

No noticeable difficulty was observed during test.

11.3 Time required for daily maintenance

15 to 20 minutes are required for daily servicing and maintenance of reaper.

11.4 Work rest cycle

Two persons are required for operation of the machine in the field. The first operator operates the reaper for 1½ hr. and then needs rest. After this, the other operator operates the machine for next 1½ hr. and the cycle continues.

12. ADJUSTMENT, DEFECTS, BREAKDOWNS & REPAIR

No noticeable defect breakdown was observed during test



14	Hardness of ledger blade	45 (Min.)	53.13	Conforms
15	Provision for adjusting the height of cutter bar	Must be provided	Provided	Conforms
16	Guards against all moving parts/drives and hot parts	Must be provided	Provided	Conforms
17	Spark arrester in engine exhaust	Must be provided	Provided	Conforms
18	Location and direction of exhaust emission to be away from the operator and machine for satisfactory operation	Must be provided	Provided	Conforms
19	Slip clutch/safety pins at cutter bar drive	Must be provided	Safety pin	Conforms
20	Slip clutch/safety pins at conveyor drive	Must be provided	Safety pin	Conforms
21	Provision of row maker/ crop guide	Must be provided	Provided	Conforms
22	Marking/ Labelling of machine	The labelling plate should be riveted on the body of machine having Name and address of manufacturer, Country of origin, Make, Model, Year of manufacture, Serial Number, Type, Size, Size of prime mover (kW)	Provided	Conforms
23	Literature	Operator manual, service manual, parts catalogue should be provided.	Provided (Operator manual & Service manual)	Partially conforms in toto

15. COMMENTS & RECOMMENDATIONS

- 15.1 **Model of Governor is not specified. It should be specified.**
- 15.2 **The specifications of knife section & knife back do not conform to IS:6025-1999 and IS:10378 respectively. This need to be looked into for corrective action**
- 15.3 **The chemical composition of knife upper, knife lower & knife back does not conform in toto, to the requirement of IS:6025-1999. This needs to be looked into for corrective action**
- 15.4 **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 effect the useful life of the components. In view of above, this deserve to be given top priority for corrective action.




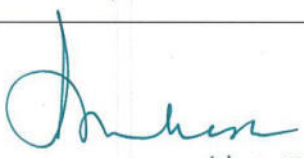
16. TECHNICAL LITERATURE

The following literatures were provided with machine during test.

- i) User manual
- ii) Operator manual

However, the user manual should be updated as per IS: 8132-1999.

TESTING AUTHORITY

Er. SANJAY KUMAR AGRICULTURAL ENGINEER	
Dr. MUKESH JAIN DIRECTOR	 11.05.2023

Test report compiled by: Er. Sunil Kumar Patil, Senior Technical Assistant

17. APPLICANT'S COMMENTS

No specific comments received from the applicant.

