

THIS REPORT IS VALID UPTO 31.05.2031



INDOXEN, AR120 POWER REAPER



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

दक्षिणी क्षेत्र कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

Southern Region Farm Machinery Training and Testing Institute

ट्रैक्टर नगर, गार्लदिन्ने-515 731, जिला: अनंतपुर (आं. प्र.)

Tractor Nagar, Garladinne-515 731, District: Anantapur (A.P.)

[An ISO 9001:2015 CERTIFIED INSTITUTE]

Website: <http://srfmtti.dacnet.nic.in/>

Machine- 588/1645	INDOXEN, AR120 POWER REAPER	COMMERCIAL (ICT)
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Manufacturer, (apa) : M/s. Yancheng Xinmingyue Machinery
Manufacturer Co, Ltd., Xinyang Road No.11,
Tinghu District, Yancheng City, Jiangsu Province,
China.

Applicant : M/s. A.R. Agro equipments, No: 45/1149, Near
Cheruvannur High School, Kolathara P.O,
Kozhikode, Kerala, India-673655.

INDOXEN, AR120 POWER REAPER

Report No.: **Machine-588/1645**

Month: **June**

Year: **2024**



Government of India
Ministry of Agriculture and Farmers Welfare
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Southern Region Farm Machinery Training and Testing Institute
Tractor Nagar, Garladinne-515 731, District: Anantapur (A.P.)
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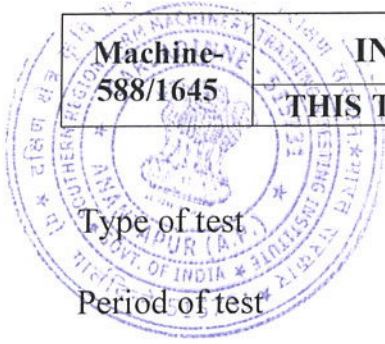
Telephone No. 08551-286441

Website: <http://srfmtti.dacnet.nic.in/>

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SOUTHERN REGION FARM MACHINERY TRAINING & TESTING INSTITUTE,
ANANTAPUR, (A.P.)

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Machine-
588/1645

INDOXEN, AR120 POWER REAPER

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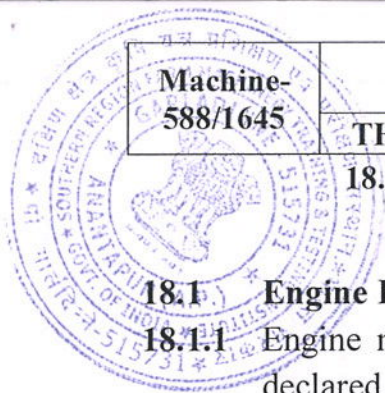
COMMERCIAL
(ICT)

Type of test : Commercial (ICT)
Period of test : March, 2024 to June, 2024
Test Report No. : Machine-588/1645
Month / Year of release : June, 2024

- i) The results reported in this report are observed values and no corrections have been applied for atmospheric and site conditions.
- ii) The test sample was selected randomly through virtual mode by the Institute.
- iii) The results presented in this report do not, in any way, attribute to the durability of the machine.
- iv) This report should not be reproduced in part or full without prior permission of the Director, Southern Region Farm Machinery Training and Testing Institute, Garladinne, Anantapur (A.P.).
- V) This is a report on Commercial Test of Power Reaper named "INDOXEN, AR120 POWER REAPER". This report is valid up to 31.05.2031, Vide Ministry's O.M. No. 13-22/2020-M&T (I&P) dated 12.12.2023.

SELECTED CONVERSIONS

S. No	Units	Conversion Factor
1	Force	
	1 kgf	9.80665 N 2.20462 lbf
2	Power	
	1 hp	1.01387 metric hp (Ps) 745.7 W
	1 Ps	735.5 W
	1 kW	1.35962 Ps
3	Pressure	
	1 psi	6.895 kPa
	1 kgf/cm ²	98.067 kPa = 735.56 mm of Hg
	1 bar	100 kPa = 10 N/cm ²
	1 mm of Hg	1.3332 m-bar



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18. SUMMARY OF OBSERVATIONS, COMMENTS & RECOMMENDATIONS

18.1 Engine Performance

18.1.1 Engine maximum and rated power were observed as 3.83 kW against the declared values of 4.0 kW.

18.1.2 Max. Torque was observed as 11.72 Nm against declaration value of 10.5 Nm

18.1.3 Specific fuel consumption of engine corresponding to maximum power was recorded as 498 g/kWh against the declaration value of 420 g/kWh.

18.1.4 Back up torque of engine was observed as 8.71% only. This should be looked into for corrective action.

18.2 Max. Noise at operator's ear level was observed as 95 dB (A).

18.3 The amplitude of mechanical vibration on various assemblies of the Power Reaper was observed to the extent of 598 microns, which is on higher side. Therefore, necessary action to reduce the vibration should be taken in future.

18.4 The dimension of cutting knife and fixed knife does not conform, in full, to IS: 6025-1982. This should be looked into for necessary corrective action.

18.5 Ease of operation:

- i. Safety guard must be provided for drive pulley & belt.
- ii. The exhaust must be provided with spark.
- iii. Safety notice & hazard warning labels must be provided on machine.

18.6 Field performance Test:

18.6.1 Rate of work and fuel consumption:

- The speed of harvesting ranged between 2.63 to 2.87 kmph for paddy crops respectively.
- The area harvested by the machine was recorded as 0.241 to 0.270 ha/h.
- The average hourly fuel consumption varied from 0.98 to 1.05 l/h for paddy crop respectively.
- The fuel consumption per unit area harvested varied from 3.63 to 4.13 l/ha for paddy crop respectively.

18.6.2 Quality of Work:

- i) The post-harvest loss was observed as 0.8 to 1.23 % for Paddy and respectively.
- ii) The stubble height was recorded as 44.0 to 84.2 mm for Paddy respectively.
- iii) Machine leaves the harvested crop in windrows.

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18.7 Marking /labeling:

The labeling plate does not reveal all the required information. It is therefore recommended that a suitable labeling plate covering all essential components, inter alia, the following must be provided:

- i) Country of origin
- ii) Specific fuel consumption (g/kWh).

18.8 One skilled operator can operate the machine continuously for about two hours only. Hence two skilled operators are required to operate the machine continuously and two unskilled lab our for cutting of the crop on side and corners of the field to be harvested.

18.9 Wear of critical components:

The wear rate of cutter bar on mass basis was recorded as 0.04 % per hour.




18.10 Provision for safety:

A safety pin at driven sprocket of conveyor chain is provided to take case of overloading of cutter bar.

18.11 Technical literature:

The operator manual cum parts catalogue of reaper and engine in single booklet was supplied with the reaper for reference during the test. The manuals are no adequate. The most of initial setting and discard limit of critical components may be added in manuals and leaflets etc. It is however, recommended that same may be revised and brought out in Hindi & other regional languages as per IS 8132: 1999 (Reaffirmed: 2019) for the sake of user & technical personnel.

TESTING AUTHORITY

 Er. PRAMOD YADAV AGRICULTURAL ENGINEER	 Er. P. KAMALABAI SENIOR AGRICULTURAL ENGINEER
 Dr. B.M. NANDEDE DIRECTOR	

