

व्यावसायिक परीक्षण रिपोर्ट (प्रारंभिक)  
COMMERCIAL TEST REPORT (INITIAL)  
THIS REPORT IS VALID UPTO 31.01.2031

संख्या/No:Machine-541/1585  
माह/Month: February, 2024



**NIPHA, NPR-4R-120 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

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

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<b>Machine-541/1585</b>	<b>NIPHA, NPR-4R-120 POWER REAPER</b>
	<b>THIS TEST REPORT IS VALID UP TO 31.01.2031</b>

Manufacturer : M/s Nipha India (P) Ltd., 48, Ganga Jumuna, 28/1, Shakespere sarani, Kolkata -700017, India.  
Applicant : M/s Nipha India (P) Ltd., 48, Ganga Jumuna, 28/1, Shakespere sarani, Kolkata -700017, India  
Indigenous/ Imported : Indigenous

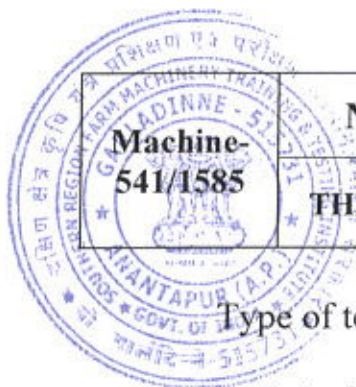
**NIPHA, NPR-4R-120 POWER REAPER**

Report No. : **Machine-541/1585**                      Month: February                      Year: **2024**



**Government of India**  
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<b>Machine-541/1585</b>	<b>NIPHA, NPR-4R-120 POWER REAPER</b>	<b>COMMERCIAL (ICT)</b>
	<b>THIS TEST REPORT IS VALID UP TO 31.01.2031</b>	

Type of test : COMMERCIAL TEST (INITIAL)

Period of test : 30.08.2023 to 01.01.2024

Test Report No. : **Machine-541/1585**

Month / Year of release : February , 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 "NIPHA, NPR-4R-120 POWER REAPER". This report is valid up to 31.01.2031, 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
3	Pressure	
	1 psi	6.895 kPa
	1 kgf/cm <sup>2</sup>	98.067 kPa = 735.56 mm of Hg
	1 bar	100 kPa = 10 N/cm <sup>2</sup>
	1 mm of Hg	1.3332 m-bar



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**17. SUMMARY OF OBSERVATIONS, COMMENTS & RECOMMENDATIONS**

- 17.1 Engine maximum and rated power were observed as 3.8 kW against the declared value of 4.0 kW.
- 17.2 Back up torque of engine was observed as 6.49% against the declared value of 10%. This should be looked into for corrective action.
- 17.3 Specific fuel consumption of engine corresponding to maximum power was recorded as 410 g/kWh. Against the declaration value of 435 g/kWh
- 17.4 Max. Torque was observed (at output shaft) as 21.56 Nm against declaration value of 26 Nm.
- 17.5 Max. noise at operator's ear level was observed as 95 dB (A) against the declared value of 90 dB (A).
- 17.6 The amplitude of mechanical vibration on various assemblies of the power reaper was observed to the extent of 340 microns, which is on higher side. Therefore, necessary action to reduce the vibration should be taken up in future.
- 17.7 The dimension of knife does not conform, in full, to IS: 6025-1982. This should be looked into for necessary corrective action.
- 17.8 **Provided labeling plate should have following information-**
  - i) Make
  - ii) Engine model
  - iii) Engine No.
  - iv) Maximum power, (kW)
  - v) Specific fuel consumptions, (g/kWh)
- 17.9 **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 warnings labels **MUST** be provided on machine.
- 17.10 **Field performance Test:**
  - 17.10.1 Rate of work and fuel consumption:
    - The speed of harvesting ranged between 3.05 to 3.18 kmph for paddy crop.
    - The area harvested by the machine was recorded as 0.250 to 0.267 ha/h.
    - The average hourly fuel consumption varied from 1.00to 1.30 l/h for paddy crop.
    - The fuel consumption per unit area harvested varied from 4.00 to 4.78 l/ha



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for paddy crop.

**17.10.2 Quality of Work:**

- i) The post-harvest loss was observed as 0.10 to 0.13 %.
- ii) The stubble height was recorded as 56 to 66 mm.
- iii) Machine leaves the harvested crop in windrows.

**17.11** 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 labour for cutting of the crop on side and corners of the field to be harvested.

**17.12 Wear of critical components:**

- i) The wear rate of cutter bar on mass basis was recorded as 0.003% per hour.
- ii) Hardness of movable & stationary knife at its shank portion conform to the requirement as per IS 6025:1982 (Reaffirmed:1999).
- iii) The chemical composition of cutting (movable) blade and stationary knife are not conforming to the requirement of relevant IS (IS 6025:1982 (Reaffirmed: 1999). Therefore, this should be taken care for corrective action.

**17.13 Provision for safety:**

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

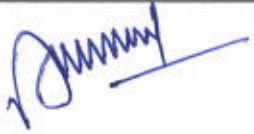


**17.14 Technical literature:**

The operator manual cum service manual of reaper and engine in single booklet was supplied with the reaper for reference during the test. 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



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**TESTING AUTHORITY:**

 Er. PRAMOD YADAV AGRICULTURAL ENGINEER	 Er. D.C. MOULI AGRICULTURAL ENGINEER
 Dr. B.M. NANDEDE DIRECTOR	



**19. APPLICANT COMMENTS**

S.No.	Reference/para no.	Page no.	Comments
1.	17.2 Back-up torque	36	As soon as possible we will comply with all your recommendations as stated in the DTR
2.	17.6 Mechanical vibration	36	
3.	17.7 Knife	36	
4.	17.9(Iii) --Sticker	36	
5.	17.12 (Ii)&(Iii)	37	
6.	17.14	37	
7.	Table 18-Critical Technical Specification	Page no. 38,39	
8.	Point No 17,22 , Page No -38 And 39 38,39		