



GAJARAJ G-SPR-1201 P POWER REAPER



भारत सरकार

Government of India

कृषि एवं किसान कल्याण मंत्रालय

Ministry of Agriculture and Farmers Welfare

कृषि, सहकारिता एवं किसान कल्याण विभाग

Department of Agriculture, Cooperation 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]

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Machine-342/1154	GAJARAJ G-SPR-1201 P POWER REAPER	COMMERCIAL (ICT)
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Manufacturer : M/s. Yancheng Xinmingyue Machinery Manufacture Co., No. 11, Xinyang Road, Tinghu District, Yancheng City, Jiangsu Province, **China**.

Applicant : M/s. Ganesh Trading Company, 421, Shastri Nagar, Opp. Sagra Church, Lametha Road, Jabalpur-482001, Madhya Pradesh, **India**

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Report No. : Machine-342/1154

Month: May

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16. SUMMARY OF OBSERVATIONS, COMMENTS & RECOMMENDATIONS

- 16.1** Engine maximum and rated power were observed as 3.0 kW & 2.3 kW against the declared values of 4.8 kW. This should be looked into for corrective action.
- 16.2** Back up torque of engine was observed as 5.10 %.
- 16.3** Specific fuel consumption of engine corresponding to maximum power was recorded as 287 g/kWh against the declared value of 290 g/kWh.
- 16.4** Specific fuel consumption of engine corresponding to rated power was recorded as 328 g/kWh against the declared value of 290 g/kWh. This should be looked into for corrective action.
- 16.5** Max. torque was observed as 10.3 Nm against the declared value of 18.0 Nm in natural ambient condition. This should be looked into for corrective action.
- 16.6** Max. Noise at operator's ear level was observed as 96 dB (A), which is higher as per ILO. Therefore this should be looked into for corrective action.
- 16.7** The amplitude of mechanical vibration on various assemblies of the Power Reaper was observed to the extent of 720 micron, which is on drastically higher side and is directly concerned with Operator's Health, Safety and Comfort. Besides, it also adversely affects the useful life of the components. In view of the above, this deserves to be taken care for corrective action.
- 16.8** The dimension of Knife does not conform, in full, to IS: 6025-1982.
- 16.9** Provided labeling plate should be as per the requirement of IS.
- 16.10 Field Performance Test:**
- 16.10.1 Rate of work:**
- i) The average area covered and time required for harvesting one hectare was recorded as 0.193 to 0.200 ha/h and 5.00 to 5.11 hours respectively.
 - ii) The average hourly fuel consumption varies from 1.05 to 1.17l/h & the fuel requires for harvesting one hectare area was recorded as 5.3 to 6.06/ha.
 - iii) The average mass of straw with grain harvested was recorded as 22936 to 25147 kg/ha.
 - iv) The average mass of grains recovered was recorded as 5046 to 5545kg/ha.
- 16.10.2 Quality of work:**
- i) The average post harvest loss was recorded as 0.01 to 0.03%.
 - ii) The average stubble height was recorded as 46 to 51 mm.

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iii) The crop harvested by the machine is left in windrows, which minimizes the time required for the collection and transportation of the crop.

16.11 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 labours for cutting of the crop on sides and corners of the field to be harvested.

16.12 **Wear of critical components:**

- i) The wear rate of cutter bar on mass basis was recorded as 0.05 % per hour.
- ii) Hardness of movable & stationary blade conforms to the requirement as per IS 6025:1982 (Reaffirmed 1999).
- iii) The chemical composition of cutting (movable) blade and stationary blades are not conforming to the requirement of relevant code. Therefore, this should be taken care for corrective action.



16.13 **Provision for safety:**

A safety pin on the conveyor chain is not provided to take care of overloading of cutter bar. It needs to be provided at suitable place.

16.14 **Technical literature:**

The operation manual cum parts catalogue of reaper and engine in single booklet was supplied with the reaper for reference during the test. It is however, recommended that same may be revised and bought out in Hindi & other regional languages as per IS 8132 :1999 (Reaffirmed 2004) for the sake of user & technical personnel.

TESTING AUTHORITY:

B.N. DIXIT AGRICULTURAL ENGINEER	
Dr. P.P. RAO DIRECTOR	

17. APPLICANT'S COMMENTS

"We will inform all your recommendations to our manufacturer to make all possible and necessary changes for our future products".