

व्यावसायिक परीक्षण रिपोर्ट

संख्या/ No.: COMB-269/2848/2022

COMMERCIAL TEST REPORT (FIRST BATCH)

माह/Month: May, 2022

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



**BALKAR 654,
SELF PROPELLED COMBINE HARVESTER**



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

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15. SELECTED PERFORMANCE AND OTHER CHARACTERISTICS

15.1 Acceptance criteria for performance characteristics as per Para. 4.1 IS:15806-2018							
Sr. No.	Characteristics		Category (Evaluative/Non evaluative)	Requirement (R) Declaration (D)	Tolerance	Observed	Remarks
I. Prime mover performance							
	a)	Max. power (absolute) Average max. power observed during 2 hrs. Max. power test in natural ambient condition, kW	Evaluative	71.7 (D)	±5% of declared value	73.8	Conforms
	b)	Max. power observed during test after adjusting the no load engine speed as per recommendation of the manufacturer's for field work, kW	Evaluative	68.0 (D)	±5% of declared value	68.8	Conforms
	c)	Power at rated engine speed, kW (under natural ambient condition)	Non-evaluative	72.0 (D)	±5% of declared value	73.1	Conforms
	d)	Specific fuel consumption corresponding to average maximum power under 2 hours maximum power test, g/kWh.	Evaluative	240 (D)	±5% of declared value	244.7	Conforms
	e)	Max. smoke density (Bosch no.) at 80% load between the speed at max. power & 55% of speed at max. or 1000 rpm whichever is higher	Evaluative	As per CMV rules, Light absorption coefficient 3.25 m ⁻¹ / Hartridge units 75 (D)	Nil	2.18	Conforms
	f)	Max. crank shaft torque, (Nm) observed during the test after no load engine speed is adjusted as per manufacture's recommendation for field work	Evaluative	410 (D)	±8% of declared value	426.2	Conforms

	g)	Back up torque, %	Evaluative	7 % min. (R)	Nil	42.12	Conforms
	h)	Max. operating temperature, °C i) Engine oil ii) Coolant	Evaluative	i) 120 (D) ii) 105 (D)	Should not exceed the declared value	i) 100 ii) 91	Conforms
	i)	Lubrication oil consumption, g/kWh	Evaluative	Not exceeding 1 % of SFC at maximum power (high ambient) (R) (2.45)	Nil	0.334	Conforms
II. Brake performance at 20 kmph or maximum speed whichever is less							
	a)	Max. stopping distance at a force equal to or less than 600 N on brake pedal (m) (cold brake and hot brake) CMVR does not prescribe hot brake test.	Evaluative	As per requirement of CMVR, Max. 10 m (R)	--	Cold 6.17 m Hot 6.17 m	Conforms
	b)	Max. force exerted on brake pedal to achieve deceleration of 2.5 m/s ² (N)	Evaluative	≤ 600 N (R)	--	Cold 330 N Hot 350 N	Conforms
	c)	Effectiveness of parking brake at a force of 600 N at foot pedal or 400 N at hand lever	Evaluative	As per requirement of CMVR, Should be effective (R)	--	Effective	Conforms
III. Mechanical vibration							
	a)	Operator's platform	Non evaluative	120 μm max. (R)	Nil	167	Does not conform
	b)	Steering control wheel	Non evaluative	150 μm max. (R)	Nil	421	Does not conform
	c)	Seat with driver seated	Non evaluative	120 μm max. (R)	Nil	345	Does not conform
IV. Air cleaner oil pull over							
	a)	Air cleaner oil Pull over in % when tested in accordance with IS:8122 Part (II)-2000	Evaluative	0.20 max. (R)	Nil	Dry type air is cleaner provided and hence test is not applicable	Not applicable
V. Noise measurement							
	a)	Max. ambient noise emitted by combine at By-standers position, dB (A)	Evaluative	As per CMV rules 88 dB (A) Maximum (R)	Nil	82.1	Conforms

	Previous Sample	Present Sample
No. & type of wheel	:	Two. Pneumatic ribbed.
Make	:	GOOD YEAR CEAT
Size & ply rating	:	9.00-16.0, 16PR
Track width (mm)	:	1675 1820
Height of trailer hitch in transport position, mm	:	815 825

16.34 Conformity to Indian Standard

i) IS: 6025-1982	:	Does not conform
ii) IS: 6024-1983	:	Does not conform
iii) IS: 10378-1982	:	Does not conform
iv) IS:6283 (Part-1)-2006	:	Does not conform Conforms
v) IS:6283 (Part-2)-2007	:	Does not conform Conforms
vi) IS: 8133-1983	:	Conforms
vii) IS: 15806-2018	:	Does not conform Conforms the evaluative requirements

17. COMMENTS AND RECOMMENDATIONS**17.1 Mechanical vibration**

The amplitude of mechanical vibration of components marked as (*) in chapter 12 of this report are observed on higher side. This calls for providing suitable remedial measures to dampen the vibration in order to improve the operational comfort and service life of various components & sub-assemblies.

17.2 Ease of operation and safety provision

- i) Safety against the accidental start of engine is not provided on combine harvester. It **MUST** be provided.
- ii) Height of 1st step from ground level is observed as 700 mm against 550 mm (max.). It **MUST** be looked into for necessary improvement.
- iii) No noticeable difficulties observed during operation of combine harvester.

17.3 Hardness and chemical composition

Hardness & chemical composition of knife blade, knife guard and knife back is not within the limits specified in the relevant standards. It should be looked into for corrective action at regular production level.

17.4 Individual brake pedals for LHS & RHS brake is not provided. It may be considered for providing.**17.5 Discrepancies in the maintenance schedule chart provided in operator's manual are observed. It should be checked and corrected.**

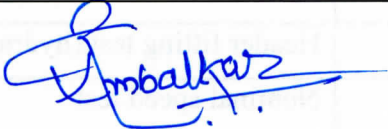
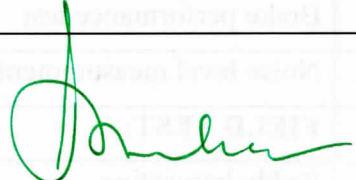
17.6 Literature supplied with the machine

The following literature was submitted by applicant during testing.

- i) Operator's and manual for combine harvester
- ii) Parts catalogue for combine harvester
- iii) HAEETI, Service manual of Ashok leyland

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

TESTING AUTHORITY

Er. G.R. AMBALKAR AGRICULTURAL ENGINEER	
Dr. MUKESH JAIN DIRECTOR	 09.05.2022

18. APPLICANT'S COMMENTS

Para No.	Our Reference	Applicant's comments
18.1	17.1	We will ensure that mechanical vibration of the machine should be within limit in regular production.
18.2	17.3	Hardness and chemical composition of the knife blade and knife is very near to the requirement however we will make arrangement to match the composition as per requirement.