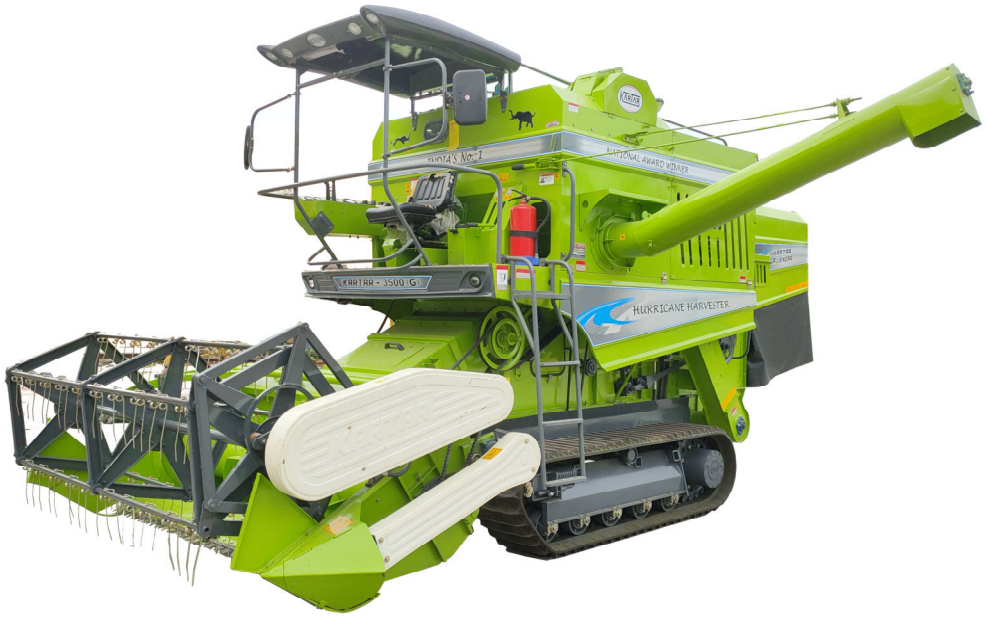
ADMINISTRATIVE EXTENSION REPORT **COMB- 240/2758/2021**
प्रशानिक विस्तार रिपोर्ट **October, 2021**

COMMERCIAL TEST REPORT **COMB-202/2346/2019**
व्यावसायिक परीक्षण रिपोर्ट **August, 2019**

TEST REPORT IS VALID UPTO : 31ST AUGUST, 2026



KARTAR 3500 G, SELF PROPELLED PADDY COMBINE HARVESTER (TRACK TYPE)

सत्यमेव जयते

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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5. SELECTED PERFORMANCE AND OTHER CHARACTERISTICS AS PER IS 15806 : 2018 (Complete evaluation including originally tested sample and sample inspected/tested for administrative extension)

S. No	Characteristics		Category (Evaluative/ Non evaluative)	Requirement (R)/ Declaration (D)	Tolerance	Observed	Remarks
1	2		3	4	5	6	7
I.	**Prime mover performance**						
	a)	Max. Power (absolute) Average max. Power observed during 2 hrs. Max. Power test in natural ambient condition, kW	Evaluative	55.0	±5% of declared value	53.2	Conforms
	b)	Max. Power observed during test after adjusting the no load engine speed as per recommendation of the manufacturer for field work, kW	Evaluative	55.0	±5% of declared value	53.2	Conforms
	c)	Power at rated engine speed, kW (under natural ambient condition)	Evaluative	55.0	±5% of declared value	52.5	Conforms
	d)	Specific fuel consumption corresponding to average maximum power under 2h maximum power test, g/kWh.	Evaluative	245	+5% of declared value	250	Conforms
	e)	Max. Smoke density 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. Maximum smoke density Light absorption coefficient 3.25 per meter /Hartridge units 75	Nil	1.6 m^{-1}	Conforms
	f)	Max. Crank shaft torque, (Nm) observed during the test after no load engine speed is adjusted as per manufacturer's recommendation for field work	Evaluative	340	±8% of declared value	336	Conforms

1	2		3	4	5	6	7
	g)	Back up torque, %	Evaluative	7 % min.	Nil	43.8	Conforms
	h)	Max. Operating temperature, °C i) Engine oil ii) Coolant	Evaluative	i) 130 (Max)(D) ii) 120 (Max)(D)	Should not exceed the declared value	i) 111 ii) 94	Conforms
	i)	Lubrication oil consumption, g/kWh	Evaluative	Not exceeding 1 % of SFC at maximum power (high ambient)	Nil	0.172	Conforms
II. Brake performance at 24 km/h 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)	Evaluative	As per requirement of CMVR	--	Not applicable, as Hydro static transmission does not require any separate/ conventional brake system	Conforms
	b)	Max. Force exerted on brake pedal to achieve declaration of 2.5 m/sec^2(N)	Evaluative	As per requirement of CMVR	--		
	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	--		
III. Mechanical vibration							
	a)	Operator's platform	Non evaluative	120 µm max.	Nil	3200	**Does not conform**
	b)	Steering control wheel	Non evaluative	150 µm max.	Nil	No steering control wheel is there	**NA**
	c)	Seat with driver seated	Non evaluative	120 µm max.	Nil	2000	**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.	Nil	Dry type air cleaner provided hence test is not applicable	--

1	2	3	4	5	6	7
V. Noise measurement						
a)	Max. ambient noise emitted by combine at bystanders position dB (A)	Evaluative	88 dB (A) as per CMVR	Nil	86	Conforms
b)	Max. noise at operator's ear level dB (A)	Evaluative	98 dB (A) as per CMVR	Nil	93	Conforms
VI. Header lifting Test						
a)	Satisfactory completion of header lifting test	Evaluative	-	Nil	Satisfactorily completed	Conforms
VII. Discard limit						
a)	Cylinder bore diameter, mm	Evaluative	104.15	Should not exceed the values declared by the manufacturer	104.06	Conforms
b)	Piston diameter, mm	Evaluative	103.784	-do-	103.92	Conforms
c)	Piston to cylinder liner clearance at skirt	Evaluative	0.15	-do-	0.12	Conforms
d)	Ring end gap, mm i) Top compression ring ii) 2nd compression ring iii) Oil ring	Evaluative	 1.2 1.2 1.2	-do-	 0.45 0.50 0.40	Conforms
e)	Ring groove clearance, mm 1. Top compression ring 2. 2nd compression ring 3. Oil ring	Evaluative	 Tapered 0.2 0.1	-do-	 Tapered 0.07 0.06	Conforms
f)	Diametrical and axial clearance of big end bearing, mm Diametrical Axial	Evaluative	 0.30 0.50	-do-	 0.08 0.40	Conforms
g)	Diametrical and axial clearance of main bearings, mm Diametrical Axial/crank shaft end float	Evaluative	 0.30 0.60	-do-	 0.13 0.10	Conforms
h)	Thickness of brake lining, mm	Evaluative	NA	-do-	--	--
i)	Thickness of clutch plate, mm	Evaluative	NA	-do-	--	--

1	2		3	4			5	6	7
VIII. Field performance									
	a)	Suitability for crops	Evaluative	Wheat & paddy (Wheel type) Paddy (Track type)			Nil	Paddy	Conforms
	b)	Processing losses (%)	Evaluative	Wheat Barley Rice Sorgum Maize Oilseed rape Soya Beans	: : : : : : :	Max 3% Max 4% Max 4% Max 3% Max 5% Max 4% Max 5%	Nil	1.8%	Conforms
	c)	Threshing efficiency	Evaluative	≥98 percent for wheat & Paddy			Nil	99.2% for Paddy	Conforms
	d)	Cleaning efficiency	Evaluative	≥96 percent for wheat & Paddy			Nil	97.5% for Paddy	Conforms
	e)	Grain breakage in main grain tank	Evaluative	≤2.5 percent			Nil	0.93% for Paddy	Conforms
	f)	Non collectable losses	Evaluative	i) ≤2.5 percent for wheat & Paddy & grain ii) ≤4.0 percent for Soybean			Nil	1.0 % for Paddy	Conforms
IX. Safety requirement									
	a)	Guards against all moving parts/ drives and hot parts	Evaluative	Belt and chain drives, pulleys hydraulic pipes around operators work place		--		Provided	Conforms
	b)	Lighting arrangement	Evaluative	As per CMVR		-		NA	--
	c)	Grain tank cover	Evaluative	Essential		-		Provided	Conforms
	d)	Spark arrester in engine's exhaust in case naturally aspirated engine	Evaluative	Essential		-		Provided	Conforms
	e)	Stone trap before concave bars	Evaluative	Essential		-		Provided	Conforms

1	2		3	4	5	6	7
	f)	Rear view mirror	Evaluative	Essential	-	Provided	Conforms
	g)	Fire extinguisher	Evaluative	Essential	-	Provided	Conforms
	h)	Slip clutch at following drives –					
		i) Cutting platform auger	Evaluative	Essential		Provided	Conforms
		ii) Undershot conveyor drive	Non evaluative	Essential	-	Provided	Conforms
		iii) Grain & tailing elevator	Non evaluative	Essential		Provided	Conforms
	i)	Anti slip surfaces at operator platform & ladder & proper gripping for the control levers.	Evaluative	Essential	-	Provided	Conforms
	j)	Working clearance around the controls	Non evaluative	Essential 70 mm (Min.)	-	Provided	Conforms
	k)	Labelling of control gauges and all operating controls	Evaluative	Essential	-	Provided	Conforms
XI	**Material of construction :**						
	i)	Knife guard should conforms to IS: 6024 -1983	Non evaluative	Should have maximum hardness 163HB	-	NA	--
	ii)	Knife blade As per IS: 6025 -1982	Non evaluative	It must have Chemical composition as C=0.70-0.95 %	-	C=0.8236	**Does not conform**
				Mn= 0.30-0.50%		Mn= 0.9511	**Does not conform**
	iii)	Knife back should meet the requirement of IS: 10378-1982	Non evaluative	The knife back shall be manufactured from Carbon Steel having minimum carbon content of 0.35 %	--	C=0.1027	**Does not conform**

XII. Break down (critical, major & minor)					
Sr. No.	Category of breakdowns	Category (Evaluative/ Non evaluative)	Requirements as per IS:15806-2018	As observed	Whether meets the requirements (Yes/No)
1.	Critical	Evaluative	No critical breakdown	None	Yes
2.	Major	Evaluative	Not more than two and neither of them should be repetitive in nature	None	Yes
3.	Minor	Evaluative	Not more than five and frequency of each should not be more than two	None	Yes
4.	Total breakdown	Evaluative	In no case total no of (major + minor) breakdowns exceed five	None	Yes

6. SUMMARY OF OBSERVATION, COMMENTS AND RECOMMENDATIONS

6.1 As per test report No Comb.- 202/2346/2019 Para 2.8 (i) & 19.3 (iii), 19.3 (v) Symbol No. 6.16, 7.8 and many more were not available as per IS: 6283 (Part-1) 2006, Now, applicant has provided the same on combine harvester and conforms the requirements of IS: 15806-2018.

6.2 As per test report No. Comb- 202//2346/2019 Para 2.8 (ii), 19.3 (iii) No. 8.9, 8.12, 8.22 and many more were not available as per IS: 6283 (Part 2)-2007. Now, applicant provided the same on combine harvester and conforms the requirement.

6.3 Safety guards on header assembly drive chain & belt is provided and conforms the requirement.

6.4 As per test report No. Comb- 202//2346/2019, Chapter - 18 (X)(h) & Para 19.3 (ii) Slip clutch at undershot conveyor drive and grain and tailing elevator drive were not provided. Now, the applicant has provided the same on combine harvester and conforms the requirement.

6.5 The effect of the modifications on performance has been examined and considered that, the modifications are not going to affect the results of the original test. The Original test report, therefore, applies to the modified combine harvester also.

TESTING AUTHORITY

Er. G.R. AMBALKAR AGRICULTURAL ENGINEER	Ambalkar
Dr. MUKESH JAIN **DIRECTOR**	22.10.2021

7. APPLICANT'S COMMENTS

No specific comment is submitted by the applicant. However, said that report is ok.