

ADMINISTRATIVE EXTENSION REPORT

प्रशानिक विस्तार रिपोर्ट

COMMERCIAL TEST REPORT

व्यावसायिक परीक्षण रिपोर्ट

COMB- 239/2757/2021

October, 2021

COMB-216/2484/2020

July, 2020

TEST REPORT IS VALID UPTO : 31ST JULY, 2027



**DASMESH-9100 PLASMA PLUS
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

Northern Region Farm Machinery Training and Testing Institute

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[ISO 9001:2015 CERTIFIED]

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4.2.2	At RHS of the operator		
i)	Brake pedals	Provided	Provided
ii)	Gear shifting lever	Provided	Provided
iii)	Fuel cut off lever	Provided	Provided
4.2.3	At LHS of the operator		
i)	Clutch pedal	Provided	Provided
ii)	Cutter bar drive engaging lever	Provided	Provided
iii)	Unloading auger drive engaging lever	Provided	Provided
iv)	Unloading auger locking lever	Provided	Provided
v)	Unloading auger releasing lever	Provided	Provided
vi)	Threshing unit engaging lever	Provided	Provided
vii)	Concave clearance adjusting lever	Provided	Provided
4.2.4	At front of the operator		
i)	Steering control wheel	Not applicable	Not applicable
ii)	Combination switch for high low beam, side indicator and horn	Provided	Provided

4.3 Conformity with IS: 6283 (Part I) 2006 & (Part II) 2007.

- i) Conform to the requirements of IS: 6283 (Part 1) 2006
ii) Conform to the requirements of IS: 6283 (Part 2) 2007

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/N on evaluative)	Requirement Declaration	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	74.3	±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 for field work, kW	Evaluative	70	±5% of declared value	68.8	Conforms
c)	Power at rated engine speed, kW (under natural ambient condition)	Non-evaluative	74.3	±5% of declared value	73.1	Conforms

1	2	3	4	5	6	7
d)	Specific fuel consumption corresponding to average maximum power under 2 h maximum power test, g/kWh.	Evaluative	250	+5% of declared value	245	Conforms
e)	Max. Smoke density (Bosch no) at 80% load between the speed at max. Power and 55% of speed at max. Or 1000 rpm whichever is higher	Evaluative	As per central motor vehicles rules (CMV) rules	Nil	2.18 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	440	±8%	429	Conforms
g)	Back up torque, % (Natural Ambient)	Evaluative	7 % min.	Nil	42.27	Conforms
h)	Max. Operating temperature, °C i) Engine oil ii) Coolant	Evaluative	i) 125 ii) 105	Nil	i) 115 ii) 98	Conforms
i)	Lubrication oil consumption, g/kWh	Evaluative	Not exceeding 1 % of SFC at maximum power (high ambient condition)	Nil	0.387	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	Nil	Cold: 5.35 Hot: 6.55	Conforms
b)	Max. Force exerted on brake pedal to achieve a deceleration of 2.5 m/sec ² (N)	Evaluative	≤ 600 N	Nil	Cold: 335 Hot: 415	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	Nil	Effective	Conforms

1	2	3	4	5	6	7
III. Mechanical vibration						
a)	Operator's platform	Non-evaluative	120 µm max.	Nil	295	Does not conform
b)	Steering control wheel	Non-evaluative	150 µm max.	Nil	270	Does not conform
c)	Seat with driver seated	Non-evaluative	120 µm max.	Nil	285	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	0.20max.	Nil	Dry type air cleaner provided hence test is not applicable	Not applicable
V. Noise measurement						
a)	Max. ambient noise emitted by combine at bystanders position dB (A)	Evaluative	As per CMV rules	Nil	86	Conforms
b)	Max. noise at operator's ear level dB (A)	Evaluative	As per CMV rules	Nil	97	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	Nil	104.02	Conforms
b)	Piston diameter, mm	Evaluative	103.745	Nil	103.92	Conforms
c)	Piston to cylinder liner clearance at skirt	Evaluative	0.20	Nil	0.08	Conforms
d)	Ring end gap, mm i) Top compression ring ii) 2 nd compression ring iii) Oil ring	Evaluative	i) 1.2 ii) 1.2 iii) 1.2	Nil	i) 0.40 ii) 0.50 iii) 0.35	Conforms
e)	Ring groove clearance, mm 1. Top compression ring 2. 2 nd compression ring 3. Oil ring	Evaluative	i) Tapered ii) 0.20 ii) 0.20	Nil	i) Tapered ii) 0.08 ii) 0.04	Conforms

1	2	3	4	5	6	7
f)	Diametrical and axial clearance of big end bearing, mm Diametrical Axial	Evaluative	0.20 0.60	Nil	0.12 0.40	Conforms
g)	Diametrical and axial clearance of main bearings, mm Diametrical Crank shaft end float	Evaluative	0.25 0.60	Nil	0.06 0.16	Conforms
h)	Thickness of brake lining, mm	Evaluative	0.2 mm above rivet head	Nil	7.8	Conforms
i)	Thickness of clutch plate, mm	Evaluative	0.1 mm Up to Rivet head	Nil	2.1 to 2.4	Conforms

VIII. Field performance

a)	Suitability for crops	Evaluative	Wheat & paddy (Wheel type) Paddy (Track type)	Nil	Wheat and paddy (Wheel type)	Conforms
b)	Processing losses (%)	Evaluative	Wheat	Nil	Wheat (max of average) 3.0%	Conforms
			Rice		Rice (max of average) 2.8%	Conforms
c)	Threshing efficiency	Evaluative	≥98 percent for wheat & Paddy	Nil	98.6 % for Wheat 98.8% for Paddy	Conforms
d)	Cleaning efficiency	Evaluative	≥96 percent for wheat & Paddy	Nil	96.4% for Wheat 96.7% for Paddy	Conforms
e)	Grain breakage in main grain tank	Evaluative	≤ 2.5 percent	Nil	2.23 % for Wheat 1.34 % for Paddy	Conforms
f)	Non collectable losses	Evaluative	i) ≤ 2.5 percent for wheat, Paddy & gram ii) ≤ 4.0 percent for Soybean	Nil	1.5 % For Wheat 2.1 % For Paddy	Conforms

1	2	3	4	5	6	7
IX	Field performance for straw management system (if fitted)					
a)	Uniformity of straw spread, C.V. (percent)	Evaluative	20, Max.	--	16.1	Conforms
b)	Weighted mean size of chopped straw, cm	Evaluative	20, Max.	--	8.5	Conforms
X	Safety requirement					
a)	Guards against all moving parts/ drives and hot part	Evaluative	Belt and chain drives, pulleys hydraulic pipes (around operators work place)	--	Provided	Conforms
b)	Lighting arrangement	Evaluative	Essential as per CMVR	-	Provided	Conforms
c)	Grain tank cover	Evaluative	Essential	-	Provided	Conforms
d)	Spark arrester in engine's exhaust in case naturally aspirated engine	Evaluative	Essential	-	Turbo charger provided in exhaust system	Not Applicable
e)	Stone trap before concave bars	Evaluative	Essential	-	Provided	Conforms
f)	Rear view mirror	Evaluative	Essential	-	Provided	Conforms
g)	Fire extinguisher	Evaluative	Essential	-	Provided	Conforms
h)	Slip clutch at following drives – i) Cutting platform ii) Undershot conveyor drive iii) Grain & tailing elevator	Evaluative Non - evaluative Non - evaluative	Essential Optional Optional		Provided Provided Provided	Conforms Conforms Conforms
i)	Anti-slip surfaces at operator platform and ladder and proper gripping for the control levers.	Evaluative	Essential	-	Provided	Conforms
j)	Working clearance around the controls	Evaluative	Essential 70 mm (Min.)	-	Provided	Conforms
k)	Labelling of control and gauges and all operating controls	Evaluative	Essential	-	Provided	Provided

1	2	3	4	5	6	7	
XI	Material of construction :						
	i)	Knife guard should conform to IS: 6024 -1983	Non evaluative	Should have maximum hardness 163 HB	-	219 to 226	Does not conform
	ii)	Knife blade as per IS :6025 -1982	Non evaluative	It must have Chemical composition as C=0.70-0.95 % Mn= 0.30-0.50%	-	C=0.6553 Mn= 0.3599	Does not conform Conforms
	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=0.0730	Does not conform
	iv)	Material of blades for straw management system (SMS)	Non evaluative	The flail and fixed blades shall be manufactured from steel having the following chemical composition or such other composition as shall be agreed to between the supplier and the purchaser. a) Carbon 0.70 to 1.0 percent. b) Manganese 0.6 to 0.97 percent. c) Chrome 0.1 percent. d) Nickel 0.1 percent	--	Flail blade C- 0.5213 Mn- 0.3698 Cr-0.0690 Ni-1.1154 Fixed blade C-0.5918 Mn- 0.3719 Cr-0.0555 Ni -1.0767	As the code itself accommodate the variation in chemical composition, there is little scope for declaration of conformity or otherwise

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1	2	3	4	5	6	7
v)	Bushes for flail blades	Non evaluative	Mild steel	-	Not specified	Does not conform
vi)	Hardness of flail blades for Straw management system (SMS)	Non-Evaluative	Bush section 20 to 35 HRC	-	29.0 to 32.5	Conforms
			Edge section (Hardened zone) : 48 to 58 HRC	-	33.6 to 35.4	Does not conform
			Remainder zone : 20 to 35 HRC	-	31.9 to 37.3	Conforms
vii)	Hardness of serrated blades for Straw Management System (SMS) :	Non-Evaluative	Bush section 20 to 35 HRC	-	16.3 to 17.1	Does not conform
			Edge section (Hardened zone) : 48 to 58 HRC	-	26.3 to 28.2	Does not conform
			Remainder zone : 20 to 35 HRC	-	28.7 to 31.3	Conforms
viii)	Safety Requirements for Straw Management system, (if Fitted) :					
	a) Guards against all moving parts/ drives and hot parts	Evaluative	Essential	-	Provided	Conforms
	b) RPM indicator for rotor	Evaluative	Desirable (as written in code)	-	Provided	Conforms
	c) Overlapping of final and fixed serrated blades	Evaluative	Essential	-	Provided	Conforms

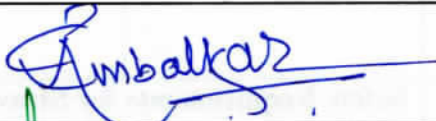
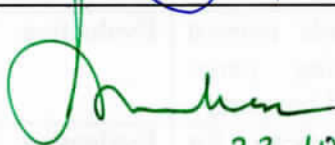
XVII. Break down (critical, major & minor)

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 OBSERVATIONS, COMMENTS & RECOMMENDATIONS

- 6.1** As per test report No Comb.- 216/2484/2020 Para 2.8 (i), 21.6 (i,) Symbol No. 7.14, 7.15, 7.27, 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.- 216/2484/2020 Para 2.8 (ii), 21.6 (i,) Symbol No. 8.4, 8.5, 8.9 and many more were not available as per IS : 6283 (Part-2) 2007, Now, applicant has provided the same on combine harvester and conforms the requirements of IS: 15806-2018.
- 6.3** Slow Moving Vehicle Emblem & Reflectors are provided.
- 6.4** 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	
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

