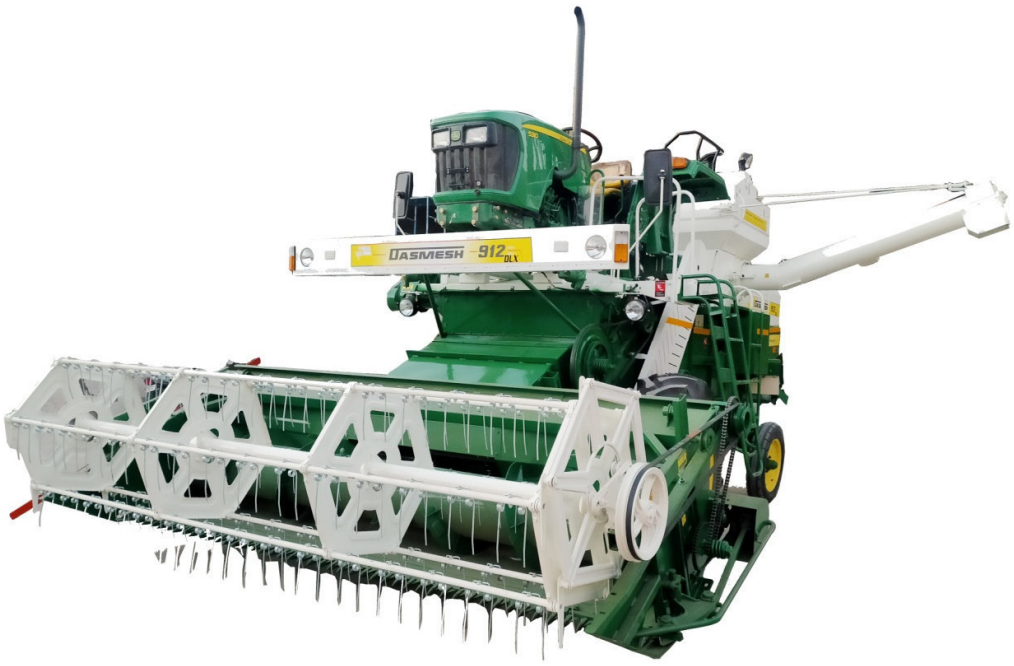
ADMINISTRATIVE EXTENSION REPORT **COMB- 242/2760/2021**
प्रशानिक विस्तार रिपोर्ट **October, 2021**

COMMERCIAL TEST REPORT **COMB-217/2485/2020**
व्यावसायिक परीक्षण रिपोर्ट **July, 2020**

TEST REPORT IS VALID UPTO : 31ST JULY, 2027



DASMESH-912 DLX
TRACTOR MOUNTED COMBINE HARVESTER

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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4.2.3	**At LHS of the operator**		
i)	Clutch pedal	Not applicable	Not applicable
ii)	High, low & medium gear selection lever.	Provided	Provided
iii)	Fuel cut-off lever.	Provided	Provided
iv)	Reverse and forward P.T.O. lever.	Provided	Provided
vii)	Grain unloading light switch.	Provided	Provided
viii)	P.T.O. clutch lever.	Provided	Provided
ix)	Field working switch	Provided	Provided
x)	SMS RPM indicator	Provided	Provided
4.2.4	**At front of the operator**		
	Steering control wheel	Not applicable	Not applicable
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)

John Deere 5310 V5 tractor was fitted as Prime mover. This John Deere 5310 V5 tractor is reported to have been tested by CFMTTI, Bundi, vide their test report No. T-1054/1579/2016, December 2016. PTO performance of John Deere 5310 V5 tractor (prime mover of this combine) to the extent it is reported in the CFMTTI Test report No. T-1054/1579/2016, December 2016, is reproduced for readers' information. Readers are advised to refer to T-1054/1579/2016, December 2016 in respect of John Deere 5310 V5 tractor, issued by CFMTTI, Budni, for detailed information.

S. No	Characteristics		Category (Evaluative/ Non evaluative)	Requirement /Declaration	Tolerance	Observed	Remarks
I.	**Prime mover performance**						
1		**2**	**3**	**4**	**5**	**6**	**7**
	a)	Max. Power (absolute) Average max. Power observed during 2 hrs. Max. Power test in natural ambient condition, kW	Evaluative	36.4	±5% of declared value	36.7	Conforms
	b)	Power at rated engine speed, kW	Non-evaluative	36.4	±5% of declared value	35.8	Conforms

	c)	Specific fuel consumption corresponding to average maximum power under 2 h maximum power test, g/kWh.	Evaluative	325	+5% of declared value	315	Conforms
	d)	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 the central vehicles (CMV) rules	Nil	0.59 per meter	Conforms
	e)	Back up torque, %	Evaluative	7 % min.	Nil	34.51	Conforms
	f)	Max. Operating temperature, °C i) Engine oil ii) Coolant	Evaluative	 135 118	Should not exceed the declared value	 123 96	Conforms
	i)	Lubrication oil consumption, g/kWh	Evaluative	Not exceeding 1 % of SFC at maximum power high ambient	Nil	0.37	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	--	Cold 5.1 Hot 5.7	Conforms
	b)	Max. Force exerted on brake pedal to achieve declaration of 2.5 m/sec^2	Evaluative	≤ 600	--	Cold 230 Hot 240	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	--	Effective	Conforms
III. Mechanical vibration							
	a)	Operator's platform	Non evaluative	120 µm max.	Nil	269	**Does not conform**
	b)	Steering control wheel	Non evaluative	150 µm max.	Nil	234	**Does not conform**
	c)	Seat with driver seated	Non evaluative	120 µm max.	Nil	223	**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	Not applicable
V. Noise measurement							
	a)	Max. ambient noise emitted by combine at bystander's position dB (A)	Evaluative	As per CMV Rules	Nil	87	Conforms
	b)	Max. noise at operator's ear level dB (A)	Evaluative	As per CMVR	Nil	97	Conforms
VI. Header lifting Test							
	a)	Satisfactory completion of header lifting test	Evaluative	-	Nil	Satisfactorily completed	Conforms
VII. Relevant discard limits of John Deere 5310 V5 tractor as reported in the CFMTTI, Budni test report No. T- 1054/1579/2016, December, 2016 are reproduced hereunder:							
	a)	Cylinder bore diameter, mm	Evaluative	106.77	Nil	106.48 to 106.50	Conforms
	b)	Piston diameter, mm	Evaluative	106.30	Nil	106.38 to 106.39	Conforms
	c)	Piston to cylinder liner clearance at skirt	Evaluative	0.32	Nil	0.11	Conforms
	d)	Ring end gap, mm i) Top compression ring ii) 2nd compression ring iii) Oil ring	Evaluative	0.75 2.00 0.75	Nil	0.50 to 0.55 0.80 0.35 to 0.45	Conforms
	e)	Ring groove clearance, mm 1. Top compression ring 2. 2nd compression ring 3. Oil ring	Evaluative	Tapered 0.25 0.92	Nil	Tapered 0.055 to 0.068 0.054 to 0.061	Conforms
	f)	Diametrical and axial clearance of big end bearing, mm Diametrical Axial	Evaluative	0.65 0.85	Nil	0.089 to 0.122 0.25 to 0.40	Conforms

	g)	Diametrical and axial clearance of main bearings, mm Diametrical Axial/crank shaft end float	Evaluative	0.65 0.85	Nil	0.035 to 0.069 0.15	Conforms
	h)	Thickness of brake lining, mm	Evaluative	Wear up to oil groove depth	Nil	LHS: 1.31 to 1.36 RHS: 1.31 to 1.41	Conforms
	i)	Thickness of clutch plate, mm	Evaluative	Wear up to rivet head	Nil	Transmission: 1.17 to 1.27, PTO: 0.86 to 0.92	Conforms
VIII. Field performance							
	a)	Suitability for crops	Evaluative	Wheat & paddy (Wheel type) Paddy (Track type)	Nil	Wheat and paddy	Conforms
	b)	Average processing losses (%)	Evaluative Wheat Rice	Max.(of average) 3% Max.(of average) 4%	Nil	Wheat Max.(of average) 2.9 % Rice Max.(of average) 2.6 %	Conforms Conforms
	c)	Threshing efficiency	Evaluative	≥98 percent for wheat & Paddy	Nil	99.1% for Wheat 98.5% for Paddy	Conforms
	d)	Cleaning efficiency	Evaluative	≥96 percent for wheat & Paddy	Nil	96.2% for Wheat 96.3% for Paddy	Conforms
	e)	Grain breakage in main grain tank	Evaluative	≤ 2.5 percent	Nil	2.16% for Wheat 1.34% for Paddy	Conforms
	f)	Non collectable losses	Evaluative	*i*) ≤ 2.5 percent for wheat & Paddy & grain *ii*) ≤ 4.0 percent for Soybean	Nil	1.4 % for Wheat 2.2 % for Paddy	Conforms

IX	**Field performance for straw management system (if fitted)**						
	a)	Uniformity of straw spread, C.V. (percent)	Evaluative	20 Max.	--	16.6	Conforms
	b)	Weighted mean size of chopped straw, cm	Evaluative	20 Max.	--	8.8	Conforms
X. Safety requirement							
	a)	Guards against all moving parts	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	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 auger	Evaluative	Essential	-	Provided	Conforms
		ii)Undershot conveyor drive	Non evaluative	Optional		Provided	Provided
		iii) Grain & tailing elevator	Non evaluative	Optional		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	Evaluative	--	-	Provided	Conforms

	k)	Labelling of control gauges and all operating controls	Evaluative	Essential	-	Provided	Conforms
XI	**Material of construction :**						
	i)	Knife guard should conform to IS: 6024 -1983	Non evaluative	Should have maximum hardness 163 HB	-	Hardness 220 to 226 HB	**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= 0.6516 Mn= 0.3639	**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=0.8206	Conforms
	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= 0.5393 Mn= 0.2713 Cr= 0.1452 Ni=1.0763 Fixed blade C=0.4493 Mn=0.5260 Cr=0.1239 Ni=1.3614	As the code itself accommodate the variation in chemical composition, there is little scope for declaration of conformity or otherwise
	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 Edge section (Hardened zone) : 48 to 58 HRC Remainder zone : 20	- - -	26.7 to 30.5 14.6 to 16.3 15.2 to	Conforms **Does not conform** **Does not**

				to 35 HRC		17.4	**conform**
	vii)	Hardness of serrated blades for Straw Management System (SMS)	Non evaluative	Bush section 20 to 35 HRC Edge section (Hardened zone) : 48 to 58 HRC Remainder zone : 20 to 35 HRC	- - -	16.4 to 19.1 17.4 to 20.7 16.3 to 18.2	**Does not conform** **Does not conform** **Does not conform**
	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

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 OBSERVATIONS, COMMENTS AND RECOMMENDATIONS

6.1 As per test report No. COMB-217/2485/2020 Para no 2.3.18 and 21.3, the grain tank cover was not provided; Now, the same has been provided by the applicant and conforms the requirement.

6.2 As per test report No Comb.- 217/2485/2020 Para 2.7 (i) (ii) Symbol No. 7.27, 7.35, 7.36, 8.4, 8.5, 8.9 and many more were not available as per IS : 6283 (Part-1) 2006 and IS : 6283 (Part-2) 2007; Now, applicant has provided the same on combine harvester and conforms the requirements of IS: 15806-2018.

6.3 As per test report No. COMB-217/2485/2020 Para no. 2.3.10 and 21.2 (i), Slip clutch at undershot conveyor was not provided; Now, the same has been provided by the applicant and conforms the requirement.

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**	Ambalkar
Dr. MUKESH JAIN **DIRECTOR**	22.10.2021

7. APPLICANT'S COMMENTS

No specific comments received from the applicant.