

व्यावसायिक वैरिएंट परीक्षण रिपोर्ट (प्रथम बैच)

संख्या/No. : T-1555/2083/2021

**COMMERCIAL VARIANT TEST REPORT**  
(1<sup>st</sup> Batch)

माह/Month : July, 2021

(यह परीक्षण रिपोर्ट 31/07/2026 तक वैध है/THIS TEST REPORT IS VALID UPTO: 31/07/2026)



## JOHN DEERE 5045D V2 TRACTOR



भारत सरकार

कृषि एवं किसान कल्याण मंत्रालय

(कृषि, सहकारिता एवं किसान कल्याण विभाग)

**GOVERNMENT OF INDIA**

**MINISTRY OF AGRICULTURE AND FARMERS WELFARE**

(DEPARTMENT OF AGRICULTURE, CO-OPERATION AND FARMERS WELFARE)

केन्द्रीय कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

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### 3. ESSENTIAL TEST

#### 3.1 SPECIFICATIONS

##### 3.1.1 Tractor:

Make	: John Deere
Model	: 5045D V2
Brand name	: None
Type	: Four wheel, Rear wheel driven, Unit construction, Standard Agricultural Tractor
Month & Year of manufacture	: 02/2021
Chassis number	: 1PY5045DCMA068723
Country of origin	: India

##### 3.1.2 Engine:

Make	: John Deere
Model	: 3029DPY94
Type	: Four stroke, Liquid cooled, Naturally aspirated, Direct injection, Diesel engine.
Serial number	: PY3029D615024
Year of manufacture	: Not available
Country of origin	: India

##### 3.1.2.1 Engine speed (rpm), (Manufacturer's recommended production settings):

- Maximum speed at no load	: 2250 to 2350
- Low idle speed	: 800 to 900
- Speed at maximum torque	: 1100 to 1400
<b>Rated speed, (rpm):</b>	
- For PTO use	: 2100
- For drawbar use	: 2100

##### 3.1.3 Cylinder & Cylinder Head:

Number	: Three
Disposition	: Vertical, inline
Bore/stroke, (mm)	: 106.5/110
Capacity as specified by the applicant, (cc)	: 2940
Compression ratio	: 18.5 (±0.39):1
Type of cylinder head	: Monoblock, cross-flow
Type of cylinder liners	: Wet, replaceable
Type of combustion chamber	: Direct injection, cavity on piston crown
Arrangement of valves	: Overhead, inline
<b>Valve clearance (cold/hot):</b>	
- Inlet valve, (mm)	: 0.35/NA
- Exhaust valve, (mm)	: 0.45/NA

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### 7. SUMMARY OF OBSERVATIONS, COMMENTS & RECOMMENDATIONS

7.1 On the basis of tests conducted the performance results have been summarized as evaluative (mandatory) and non-evaluation (Not-mandatory) parameter applicable for qualifying Minimum Performance Criteria as per Clause-4 (Table-1) of IS: 12207-2019 for acceptance of the tractor for the purpose of subsidies/NABARD financing are summarized as under:-

S. No.	Characteristic	Category (Evaluative / Non Evaluative)	Requirements as per IS: 12207-2019	Values declared by the applicant (D) / Requirement (R)	As observed	Whether meets the requirements (Yes / No)
1	2	3	4	5	6	7
<b>7.1.1</b>	<b>PTO Performance :</b>					
a)	Max. power under 2 h test, (kW ) (Natural ambient condition)	Evaluative	Declared value to be achieved with a tolerance of: $\pm 5\%$ for PTO power or engine power $>26$ kW, $\pm 10\%$ for PTO power or Engine power $\leq 26$ kW.	28.1	29.0	Yes
b)	Specific fuel consumption corresponding to maximum power, (g/kWh)	Evaluative	+ 10% Max.	270	274	Yes
<b>7.1.2</b>	<b>Safety features :</b>					
a)	Guards against moving and hot parts	Evaluative	Belt drives, pulleys, silencer, hydraulics pipes(as per IS-12239 Part 2)	Meet the requirements		Yes
b)	Lighting arrangement	Evaluative	As per CMVR	Meet the requirements		Yes
c)	Seating requirements (Tractors having more than 1150 mm rear track width)	Non Evaluative	Should meet the requirements of IS: 12343 (As amended from time to time)	<b>Does not meet the requirements</b>		<b>No</b>
d)	Technical requirements for PTO shaft	Evaluative	Should meet the requirements of IS: 4931 (As amended from time to time)	Meet the requirements		Yes
e)	Dimensions of three point linkage	Non Evaluative	Should meet the requirements of IS: 4468 (Part-I) (As amended from time to time)	Meet the requirements		Yes
f)	Specifications of linkage drawbar	Evaluative	Should meet the requirements of IS 12953 (As amended from time to time)	Meet the requirements		Yes
g)	Specifications of Swinging drawbar (wherever fitted)	Evaluative	Should meet the requirements of IS 12362 (Part 3) (As amended from time to time)	Not provided		Not applicable

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1	2	3	4	5	6	7
h)	1)	Maximum travelling speed at rated engine speed in reverse gears, kmph	Evaluative	Should not exceed 20 kmph	13.39 kmph (Meets the requirement)	Yes
	2)	Audible warning signal on tractor.	Evaluative	As soon as the travelling speed in reverse gear reaches to 20 kmph, an audible warning signal on tractor shall be activated.	Not fitted	Not applicable
<b>7.1.3</b>	<b>Labelling of tractors (Provision of labelling plate):</b>					
	1)	Make	Evaluative	Should conform to the requirements of CMVR along with maximum declared value of PTO power in kW and for month & year of manufacture in numerical MM YY Digit 01-12 in box No.1 for MM will represent the month and next two digit in the box No.2 for YY will represent the year of manufacturing	John Deere	Yes
	2)	Model	Evaluative		5045D V2	Yes
	3)	Month & Year of manufacture	Evaluative		02/21	Yes
	4)	Engine number	Evaluative		PY3029D615024	Yes
	5)	Chassis number	Evaluative		1PY5045DCMA068723	Yes
	6)	Declaration of PTO power, kW	Evaluative		28.1 (38.2)	Yes
<b>7.1.4</b>	<b>Literature (Submission to test agency)</b>					
(a)	Operator manual	Evaluative	Provided / Not Provided	Provided	Provided	Yes
(b)	Parts Catalogue	Evaluative	Provided / Not Provided	Provided	Provided	Yes
(c)	Workshop/ Service manual	Evaluative	Provided / Not Provided	Provided	Provided	Yes
<b>7.1.5</b>	<b>Fitment of Roll Over Protective Structure (ROPS):</b> for tractors having more than 1150 mm rear track width	Evaluative	ROPS should meet the requirement of IS:11821 or OECD code or equivalent International Standard	Not Provided	Not Fitted	Not Applicable
<b>7.1.6</b>	<b>Standard accessories</b>	Evaluative	Trailer hitch, front tow hook, linkage drawbar should be provided with tractor	Provided	Provided	Yes
<b>7.1.7</b>	<b>Accessories (Optional)</b>	Non Evaluative	Ballast weights if fitted should meet the requirement of CMVR.	Provided	Provided	Yes

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<b>7.2 CATEGORY OF BREAKDOWNS / DEFECTS (As per clause 5.0 of IS:12207-2019) :</b>					
<b>S. No.</b>	<b>Category of Breakdown</b>	<b>Category (Evaluative / Non Evaluative)</b>	<b>Requirements as per IS: 12207-2019</b>	<b>As observed</b>	<b>Whether meets the requirement (Yes/No.)</b>
1.	Critical breakdown	Evaluative	There is no 'critical breakdown' during the course of testing	None	Yes
2.	Major breakdowns	Evaluative	There are not more than 1 major breakdowns and neither of them is of repetitive nature	None	Yes
3.	Minor breakdowns	Evaluative	There are not more than 3 minor defects during the test and the frequency of each is not be more than two	None	Yes
4.	Total breakdowns	Evaluative	In no case, the total number of breakdowns should exceed four that is, (1 major + 3 minor) or 4 minor breakdowns	None	Yes

**7.3 Salient Observations:**

**7.3.1 Laboratory tests:**

**7.3.1.1 PTO Performance:**

- i) The maximum PTO power was observed as **29.0 kW** against the declaration of **28.1 kW**, which is within the specified limit.
- ii) The specific fuel consumption corresponding to maximum power was observed as **274 g/kWh** against the declaration of **270 g/kWh**, which meets the requirement of **IS:12207-2019**.

**7.3.1.2 Three Point Linkage:**

- i) Some of the parameters conform to Cat. I and some of them conform to Cat. II. Keeping in view the spirit of standardization, necessary improvement may be incorporated.

**7.3.1.3 Symbols of operator's controls and other displays:**

All controls are identifiable with the symbols as per IS: 6283 (Part 1&2)-1998 except the red color zone for the engine revolution gauge has not been provided. This needs to be looked into for necessary corrective action.

**7.4 Maintenance / Service problems:**

No noticeable maintenance and service problems were observed during the test.

**7.5 Recommendation with regard to safety on tractor:**

The following requirements, inter alia, may be considered for incorporation on the tractor as per relevant Indian Standards:

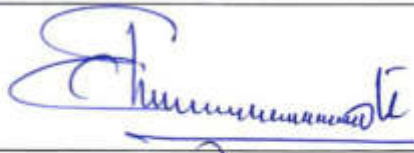


- i) Provision for spark arresting device in exhaust system.
- ii) Longitudinal Distance of the differential lock from SIP as per requirement.
- iii) Working clearance around the position and draft control levers.

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**7.6 Adequacy of Literature:**

- 7.6.1** The following literatures were supplied with the test sample for reference during the test.
- a) Operator's manual (For 5036D, 5038D, 5039D, 5042D V3, 5045D V2, 5045D 4WD V2, 5050D, 5050D V1, 5105, 5205 & 5005 tractor models)
  - b) Work shop/ Repair Technical manual [Part I, II & III] (For 5036D, 5038D, 5039D, 5042D , 5045D, 5050D, 5050D V8, 5105 4WD V2, 5205 & 5005 tractor models)
  - c) Parts Catalogue [Part I, II & III] (For 5042D V3, 5045D V2 tractor models)
- 7.6.2** The supplied literature was found adequate. However, the lubricants produced/marketted by various Indian manufacturers, if deemed suitable, may be recommended for their use in the tractor, and included in the operator's manual.
- 7.6.3** This literature should be brought out in national as well as other regional languages of India for guidance of users.

**TESTING AUTHORITY:**

<b>C.V. CHIMOTE TEST ENGINEER</b>	
<b>Y. K. RAO SENIOR AGRICULTURAL ENGINEER</b>	
<b>P. K. PANDEY DIRECTOR</b>	

Draft Test Report is compiled by: **NITESH KUMAR VERMA**, Agricultural Engineer

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### 8. Applicant's comments

Para no.	Our reference	Comments received from the applicant
8.1	7.3.1.3, 7.5 (ii) and (iii)	Valuable comments and suggestions for improvements are well taken. Under our policy of continuous product improvement these aspects are further being looked into and will try to eliminate these deviations soon wherever necessary.

### ANNEXURE -I

#### TRACTOR RUN HOURS DURING TEST

A.	LABORATORY AND TRACK TESTS:	<u>HOURS</u>
1.	Running-in	--
2.	PTO performance test	3.3
3.	Nominal speed test	0.8
B.	Miscellaneous test and other run hours including idle run, transportation, preparation for test and trial runs.	0.5
	<b>TOTAL:</b>	<b>4.6</b>