प्रारंभिक व्यावसायिक परीक्षण रिपोर्ट संख्या/No. : T-1832/2363/2024

INITIAL COMMERCIAL TEST REPORT माह/Month : March, 2024

Application Reference No. 28/2023-24/52

(यह परीक्षण रिपोर्ट 31/03/2029 तक वैध है / THIS TEST REPORT IS VALID UPTO 31/03/2029)



Make of Agricultural Tractor Model

Manufactured by

: JOHN DEERE

: 5050D V15

: M/s. John Deere India Pvt. Ltd. Gat No.166 - 167 & 271 - 291,

Off. Pune - Nagar Road, Sanaswadi,

Taluka - Shirur, Pune - 412 208



# भारत सरकार

कृषि एवं किसान कल्याण मंत्रालय (कृषि एवं किसान कल्याण विभाग)

# GOVERNMENT OF INDIA MINISTRY OF AGRICULTURE AND FARMERS WELFARE (DEPARTMENT OF AGRICULTURE & FARMERS WELFARE)

केन्द्रीय कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान ट्रैक्टर नगर, बुदनी (म.प्र.) 466 445

CENTRAL FARM MACHINERY TRAINING & TESTING INSTITUTE TRACTOR NAGAR, BUDNI (M.P.) 466 445

(An ISO 9001: 2015 Certified Institute)

E-mail: fmti-mp@nic.in Web site: http://www.fmttibudni.gov.in Telephone: 07564-299003

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#### IMPORTANT INFORMATION

The Government of India, Ministry of Agriculture and Farmers Welfare has directed, vide a OM No. 13-17/2021-M&T(I&P) dated 28.07.2022, that since 15<sup>th</sup> August, 2022, only mandatory tests will be carried out on a tractor unless applicant has expressly requested for optional tests as well, mentioned in the above captioned OM.

In the instant case, there is no request from the applicant to carry out the optional tests hence only Mandatory Tests, as given below, have been conducted and reported in this report: -

- 1. PTO performance
- 2. Hydraulic performance
- 3. Drawbar performance
- 4. Brake performance

Month: March Test Report No.: T-1832/2363/2024 Year: 2024



GOVERNMENT OF INDIA
CENTRAL FARM MACHINERY TRAINING & TESTING INSTITUTE
TRACTOR NAGAR, BUDNI (MADHYA PRADESH) 466445, INDIA
E-mail:fmti-mp@nic.in

Web site: http://www.fmttibudni.gov.in

Telephone: 07564-299003

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[C] Tractor manufacturer's name and : M/s. John Deere India Pvt. Ltd. address Gat No.166 - 167 & 271 - 291, Off. Pune-Nagar Road, Sanaswadi, Pune - 412 208 : (i) M/s. John Deere India Pvt. Ltd. [D] Location of tractor assembly Gat No.166 - 167 & 271 - 291, Off. Pune-Nagar Road, Sanaswadi, Pune - 412 208 (ii) M/s. John Deere India Pvt. Ltd. Village-Khatamba Survey No.501, Jamgod, Dewas Bhopal Highway, Dewas (Madhya Pradesh) - 455115 Submitted for test by (Applicant) The Manufacturer [C] The Ministry vide OM No. 13-17/2021 - M&T [C] Selected for test by (I&P) dated 28.07.2022, has allowed the applicant to submit the test sample directly to the Institute without requiring any random selection for Initial Commercial Testing. Thus, the applicant directly submitted the test sample to the Institute for test. [D] Place of running-in At manufacturer's works [D] Duration of running-in, (h): -Engine 20 -Transmission 20 [C] Location of test Government of India. Central Farm Machinery Training and Testing Institute, P.O. - Tractor Nagar, BUDNI - 466445 (M.P.), INDIA 1. SPECIFICATIONS OF TRACTOR Identification: 1.1 1.1.1 Denomination Make of tractor JOHN DEERE [C] 5050D V15 Model [C] Rear wheel driven, Standard Agricultural Type Tractor. Month & year of manufacture 11/23 [D] Country of origin India 1.1.2 Numbers: 1<sup>st</sup> Serial No. or prototype [D] 1PY5050DCPF051947 [C] Serial No. 1PY5050DKPA055355 1.2 **Engine:** [D] Manufacturer's address M/s. John Deere India Pvt. Ltd. : (i) Gat No.166 - 167 & 271 - 291, Off. Pune-Nagar Road, Sanaswadi Taluka - Shirur, Pune - 412 208 (ii) M/s. John Deere India Pvt. Ltd. Village-Khatamba Survey No.501, Jamgod, Dewas Bhopal Highway, Dewas (Madhya Pradesh) - 455 115. [C] Make : John Deere India Pvt. Ltd. Model 3029DPY106 Four stroke, liquid cooled, natural aspiration, Type direct injection, diesel engine : PY3029D773428 Serial No.

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# 6. SUMMARY OF OBSERVATIONS, COMMENTS & RECOMMENDATIONS

On the basis of test conducted the performance results have been summarized as evaluative (mandatory) / Non-evaluative (Non-mandatory) parameters applicable for Qualifying Minimum Performance criteria as per Clause-4 (Table-1) of **IS: 12207-2022** for acceptance of the tractor for the purpose of subsidies/NABARD financing are summarized as under:

S. No.	Ch	aracteristic	Category (Evaluative / Non Evaluative)	Requirements as per IS: 12207-2022	Values declared by the applicant/ (D) Requirement (R)	As observed	Whether meets the require- ments (Yes/No)
1		2	3	4	5	6	7
	MANDATORY TESTS: (As per Ministry's Office Memorandum No. 13-17/2021-M&T (I&P) dated 28 <sup>th</sup> of July, 2022).						T (I&P)
6.1.1		Performance:				·	
a)	unde (kW)	mum power er 2 h test, (Natural ent condition)	Evaluative	Declared value to be achieved with a tolerance of: ±5% for PTO power and or engine power >26 kW±10% for PTO power and or engine ≤ 26 kW.	30.3 (D)	30.5	Yes
b)		er at rated ne speed,	Non Evaluative	-do-	30.0 (D)	30.5	Yes
с)	cons corre	cific fuel umption esponding to mum power, Vh)	Evaluative	Should not be more than 10% of declared value.	270 (D)	277	Yes
d)	equiv	mum valent kshaft torque,	Non Evaluative	± 8%	186 (D)	166.9	No
e)	Back perce	-up torque, ent	Evaluative	Should be min. 12%	12 (D) 12 (R)	20.6	Yes
f)	Maxi	mum operating	temperature,	(°C):			
	1)	Engine oil	Evaluative	The declared value should not exceed the max. value specified by the oil company and the observed value under high ambient condition should not exceed the declaration.	135 (D)	112	Yes
	2)	Coolant	Evaluative	The declared value should not exceed the boiling temperature of coolant under the pressurized or otherwise and the observed value under high ambient condition should not exceed the declaration.	120 (D)	108	Yes
g)		ne oil umption, Vh)	Evaluative	Not exceeding 1% of SFC at max. Power under natural ambient conditions.	2.77 Maximum (R)	0.14	Yes
h)	Smo	ke level, m <sup>-1</sup>	Evaluative	Maximum light absorption coefficient of 3.25 per meter or equivalent BOSCH No. 5.2 or 75 Hatridge value ( <b>As per CMVR</b> ).	3.25 per meter Maximum (R)	0.28	Yes

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1	2	3	4	5	6	7
6.1.2	Drawbar performa	nce:				
a)	Max. drawbar pull with ballast corresponding to 15 percent wheel slip, (kN)	Non Evaluative	Minimum 70% of static mass of tractor with ballast.	18.9	*	*
b)	Max. drawbar pull without ballast corresponding to 15 percent wheel slip, (kN)	Evaluative	In case of tractors having total static mass ≥ 1500 kg, Min 70% of static mass of tractor without ballast or with standard ballast, as the case may be. In case of light weight tractors having ≤ 1500 kg total static mass of tractor, Min. 65% of static mass of tractor without ballast or with standard ballast, as the case may be.	12.8 (D) 12.77 (R) Minimum	15.45	Yes
с)	Maximum drawbar power without ballast, (kW).	Evaluative	Minimum 80 % of PTO power as referred in SI No. i) a) of PTO performance in case of tractors having total static mass > 1500 kg Minimum 75 % of PTO power as referred in SI No. i) a) of PTO performance in case of light weight tractors having ≤1500 kg total static mass of tractor Minimum 75 % of the engine power as referred in SI No. i) a) of engine performance in case of tractors which do not have a PTO shaft.	24.24 (D) 24.4 (R) Minimum	26.9	Yes
d)	Maximum transmission oil temperature, (°C)	Evaluative	The declared value should not exceed the maximum value specified by oil company	110 (D)	88	Yes

Remark (\*): Applicant vide letter no. Nil dated 06.11.2023 has requested to conduct the testing as per the additional guideline for testing of tractors vide OM No. 13-32/2023-M&T (I&P) (FTS-125476) dated 16.05.2023. Accordingly, drawbar performance test under unballasted condition was conducted only.

6.1.3	Power lift and hydraulic pump performance:						
a)	Ma	Maximum lifting capacity throughout the range of lift, (kN):					
	1)	At hitch points	Evaluative	Should not be less than 90% of declared value.	13.7 (D) 12.33 (R)	14.60	Yes
		ponito		0070 or adolarda valuer	Minimum		
	2)	With the	Evaluative	The lift capacity should at	12.2 (D)	12.23	Yes
		standard		least be 24 kg/PTO kW	7.17 (R)		
		frame		and it should be 21.5	Minimum		
				kg/engine kW where the			
				tractor is not provided with			
		<u> </u>		a PTO shaft.	=0 (D)		
b)		kimum drop in	Non	The observed value should	50 (D)	00	Yes
		height of the nt of application	Evaluative	not exceed 50 mm	Maximum		
		the force after					
	_	h 5 minutes					
	inte	rval for a total					
	dura	ation of 30					
	Min	utes, (mm)					

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1		2	3	4	5	6	7
6.1.4	Bra	ke performance a	_	4	J	ַ	1 /
a)				orce, equal to or less than 600	N on hrak	re nedal v	without
<b>س</b>		ast, (m):	starioe at a re	rice, equal to or less than ooo	iv on brai	te pedai t	Without
	1)	Cold brake	Evaluative	10	10 (R)	8.06	Yes
	2)	Hot brake	Evaluative	10	10 (R)	8.32	Yes
b)		ether parking brake	Evaluative	Yes / No	Yes	Yes	Yes
		fective at a force of					
		N at foot pedal (s) 00 N at hand lever					
6.1.5		TIONAL TESTS:					
0.1.0			not applied f	or any optional tests, therefo	re no opti	onal tests	s was
		ducted.		, , , , , , , , , , , , , , , , , , , ,			
6.1.6	Saf	ety features :					
a)	Gua	ards against	Evaluative	Belt drives, pulleys, silencer,	Mee	ts the	Yes
		ving and hot		hydraulic pipes [As per IS	requir	ement	
	part			12239 (Part2)]			
b)	_	nting	Evaluative	As per CMVR	Conf	forms	Yes
6)		angement	Non	Should meet the	Des	o not	No
c)		ating uirements	Evaluative	Should meet the requirements of IS: 12343		s not t the	No
		actors having	Lvaluative	(As amended from time to		ement	
		re than 1150 mm		time)	requii	Cilicit	
		r track width)					
d)		hnical	Non	Should meet the	Conf	orms	Yes
	requ	uirements for	Evaluative	requirements of IS: 4931 (As			
		O shaft		amended from time to time)			
e)		ensions of three	Non	Should meet the		s not	No
	poir	nt linkage	Evaluative	requirements of IS:		t the	
				17231-2019 (Part-I) (As	requir	ement	
f)	Sne	ecifications of	Non	amended from time to time) Should meet the	Mee	ts the	Yes
''		age drawbar	Evaluative	requirements of IS: 12953		ement	163
		ago arambar		(As amended from time to	1094	01110111	
				time)			
g)		nging drawbar	Non	Should meet the	Not pr	ovided	Not
	(wh	erever fitted)	Evaluative	requirement of IS: 12362			appli-
				(Part 3) (As amended from			cable
	4)			time to time)	110		1 1/
h)	1)	Maximum	Evaluative	Should not exceed 20 kmph		kmph	Yes
		travelling speed at rated				ets the ement)	
		engine speed			requir	errierit)	
		in reverse					
		gears, kmph					
	2)	Audible	Evaluative	As soon as the travelling speed	Not	fitted	Not
		warning signal		in reverse gear reaches to 20			appli-
		on tractor		kmph, an audible warning signal on tractor shall be activated. The			cable
				safety aspects about the			
				operation of shuttle technology			
				shall be brought in operation and			
				manufacturer /dealer shall			
				ensure the training on this aspect to operator before the			
				delivery of tractor.			
					i		1

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1		2	3	4	5	6	7	7
6.1.7	Lab	elling of tractor	s (Provision	of labelling plate):				
	1)	Make	Evaluative	Should conform	to the	JOHN DEE	RE	Yes
	2)	Model	Evaluative	requirements of CM\		5050D V1	5	Yes
	3)	Month &Year of	Evaluative	with maximum PTO I		11/23		Yes
		manufacture		kW and year of man	nufacture			
	4)	Engine number	Evaluative	in numerical form.	<u>-</u>	PY3029D773		Yes
	5)	Chassis	Evaluative	MM YY		1PY5050DKP/	40553	Yes
		number		Digit 01 – 12 in box	No 1for	55		
	6)	Maximum PTO	Evaluative	MM will represent the		30.3		Yes
		power, (kW)		and next two digits				
	7)	Specific fuel	Evaluative	No.2 for YY will repre		270		Yes
		consumption		year of Manufacturing				
		,g/kWh						
6.1.8		erature (Submise						
(a)	Оре	erator manual	Evaluative	Provided /	Provided	d Provided	Ye	es
41.				Not Provided				
(b)	Par	ts Catalogue	Evaluative	Provided /	Provided	d Provided	Ye	es
( )		,		Not Provided				
(c)		rkshop/	Evaluative	Provided /	Provided	d Provided	Ye	es
0.4.0		vice manual	n Dootootico (	Not Provided				
6.1.9				Structures (ROPS):		n Nat		la4
		tractor having	Evaluative		neet the			Vot
	moi		(if fitted)	requirement of IS:1182 code or equivalent Ir			appli	cable
	mm wid			Standard	nemanona	<sup>31</sup>		
6.1.10		ndard	Evaluative	Trailer hitch, front	tow hook	c. Provided	Y	20
0.1.10		essories	Evaluative	· ·	hould be		1 .	35
	ACC	C22011C2		provided with tractor	noulu De	<sup>-</sup>		
6.1.11	٨٥٥	essories	Non	Ballast weight, if fitte	od should	d Not fitted	N.	lot
0.1.11		tional)	Evaluative	meet the requirement		u i Not litted		icable
	(op	iioriai)	∟valuative	meet the requirement	OI CIVIVIX		аррі	icabie

6.2	CATEGORY OF BI	CATEGORY OF BREAKDOWNS / DEFECTS ( As per clause 5.0 of IS:12207-2022):				
S. No.	Category of break-downs	Category (Evaluative / Non Evaluative)	Requirements as per IS: 12207-2022	As observed	Whether meets the Require -ments (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 breakdowns	Evaluative	In no case, the total number of breakdowns should exceed five, that is, (2 major + 3 minor) or (1 major + 4 minor) or 5 minor breakdowns.	None	Yes	

### 6.3 Conformity with following IS:

i) Guidelines for declaration of power and specific fuel consumption and : Conforms labeling of agricultural tractors (First revision) [IS:10273 -1987 (Reaffirmed Year 2019)]

ii) Agricultural tractors - Rear mounted power take-off - Types 1, 2 and 3 (third : Conforms revision) [IS:4931-1995 (Reaffirmed Year 2019)]

iii) Agricultural wheeled tractors – Rear mounted three-point linkage: Part 1 : Does not Categories 1, 2, 3 & 4 (fourth revision) [IS:17231 – 2019] conform

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viii)

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iv) Drawbar for agricultural tractors – Link type [IS 12953:1990 (Reaffirmed : Conforms Year 2022)]

v) Agricultural tractors- Operator's seat technical requirement [IS12343 - 2021] : Does not

conform

vi) Guide for safety & comfort of operator of agricultural tractors:Part 1 General : Does not requirements (first revision):[IS 12239 (Part 1) - 2018] conform

vii) Tractors and machinery for agriculture and forestry – Technical means for : Conforms ensuring safety Part 2: Tractors (first revision) (IS 12239 (Part 2) 1999)

ensuring safety Part 2: Tractors (first revision) (IS 12239 (Part 2) 1999) (Reaffirmed Year 2019)]

Guide lines for location and operation of operator controls on agricultural tractors and machinery [IS: 8133 - 2021]

Does not conform

Tractors and machinery for agriculture and forestry, powered lawn and garden equipment - Symbols for operator controls and other displays Part -2 Symbols for agricultural tractors and machinery [IS: 6283 (Part-1) - 2006 (Reaffirmed Year 2019)] and IS: 6283 (Part-2) - 2007 (Reaffirmed Year 2019)]

conform

Does not

x) Agricultural Tractors and Machinery - Lighting device for travel on public : Conforms roads (IS:14683-1999) (Reaffirmed Year 2019)]

#### 6.4 Salient Observations:

#### 6.4.1 PTO performance test

During PTO performance test, maximum equivalent crack shaft torque was observed as 166.9 Nm against the minimum requirement of 171.1 Nm which does not meet the non-evaluative requirement of IS: 12207-2022.

#### 6.4.2 Operator's seat:

The following parameters do not meet the requirement of IS: 12343-2021.

- i) Provision for width of seat has been observed as 435 mm against the requirement of 450 (minimum).
- ii) Provision for adjustment of driver's mass has been specified as 50 to 120 kg against the requirement of 40 to 100 kg.
- Longitudinal distance of SIP from centre of differential lock pedal has been measured as 220 mm against the requirement of 410 to 720 mm.
- iv) Vertical distance of SIP from foot rest has been measured as 585 mm against the requirement of 450 to 520 mm.

This should be looked into for necessary corrective action.

#### 6.4.3 Operator's work place:

The following parameter does not meet the requirement of IS: 12239 (Part-I) 2018.

i) Provision of spark arrester.

This should be looked into for necessary corrective action.

#### 6.4.4 Three-point linkage:

The dimensions viz. diameter of upper & lower hitch pin hole, width of ball of upper hitch and leveling adjustment does not meet the requirements of IS: 17231-2019. This should be looked into for corrective action.

#### 6.4.5 Specification of Tractor:

i) Discrepancies in the specification between the Specification sheet and operator's manual are as under:

S. No.	Description	As per the specification	As per the operator's	
		sheet	manual	
a.	Change of Gear box, differential, rear axle, rear final drive, Hydraulic system,	and subsequently change	1 <sup>st</sup> change after 1100 hrs and subsequently change after 1500 hrs	
	steering & service brakes	and root me.	onango ano roco mo	

#### 6.5 Maintenance / Service Problems:

No noticeable maintenance or service problem was observed during the test.

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# 6.6 Recommendation with regard to safety on tractor:

- Colour codes of engine oil pressure, engine revolution gauge, fuel level and water temperature has not been provided as per the requirement as laid down in IS: 6283 (Part 2): 2007 (Reaffirmed year 2019).
- The distance of engine stop control from start control has been measured as 300 mm against the requirement of 150 mm (maximum), which does not meet the requirement as laid down in Table 1 of IS: 8133-2021.
- iii) The working clearance between position control lever & RHS mudguard has been measured as 45 mm against the minimum requirement of 70 mm.

Above parameters should be looked into for necessary corrective action.

# 6.7 Adequacy of Literature supplied with machine:

- 6.7.1 The following literatures were supplied with the test tractor for reference during the test:
  - a) Operator's Manual for John Deere 5036D, 5038D, 5039D, 5039D V3, 5039D V4, 5042D, 5045D, 5050D, 5050 V1, 5050D V8, 5050D V10, 5050D V14, 5050D V15, 5050D 4WD V1, 5050D 4WD V14, 5050 4WD V15, 5105, 5105 V3, 5105 V4, 5205, and 5005 Tractors (India Edition)
  - b) Technical Manual for John Deere 5036D, 5038D, 5039D, 5039D V3, 5039D V4, 5042D, 5045D, 5050D, 5050 V1, 5050D V8, 5050D V10, 5050D V14, 5050D V15, 5050D V1 4WD, 5050D 4WD V14, 5050 4WD V15, 5105, 5105 V3, 5105 V4, 5205, and 5005 tractor models.
  - Parts Catalogue Part-1 & Part-2 for John Deere 5050D V15 tractor model.

# TEST CARRIED OUT AT C.F.M.T. & T.I., BUDNI (M.P.), INDIA

#### **TESTING AUTHORITY**

B.N. DIXIT AGRICULTURAL ENGINEER	
R.P. PANDEY SENIOR INSTRUMENTATION ENGINEER	Randey
A. K. UPADHYAY DIRECTOR (I/C)	An

Draft Test Report compiled by Poonam Khurasia, Senior Technical Assistant.

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# 7. APPLICANT'S COMMENTS

Para no	Our reference	Applicant's comments
7.1	6.4.1 & 6.4.5	Your valuable comments and suggestions for
		improvements are well taken. Under our policy of continuous product improvement these aspects are further being investigated and will try to
		eliminate these deviations soon wherever necessary.

# **ANNEXURE-I**

# TRACTOR RUN HOURS DURING TEST

A.	LABORATORY AND TRACK TESTS:	HOURS
1.	Running-in	Applicant has declared it to be
		conducted on their work place.
2.	PTO performance test	11.2
3.	Power lift and hydraulic pump performance test	3.7
4.	Drawbar performance test	5.4
5.	Brake performance test	2.0
6.	Nominal speed test	0.8
B.	Miscellaneous test and other run hours including	0.9
	idle run, transportation, trials and preparation for	
	test.	
TOTAL:		24.0