

व्यावसायिक वैरिएंट परीक्षण रिपोर्ट (प्रथम बैच)

संख्या/ No. : T-1604/2135/2021

COMMERCIAL VARIANT TEST REPORT (1st Batch)

माह/ Month : November, 2021

[ONLINE TESTING]

(यह परीक्षण रिपोर्ट 30/11/2026 तक वैध है। / THIS TEST REPORT IS VALID UPTO: 30/11/2026)



JOHN DEERE 5105 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, Cooperation & Farmers Welfare)

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2. FUEL AND LUBRICANTS

2.1 Fuel : The High-speed diesel oil supplied by M/s Indian Oil Corporation Limited having density of 0.827 g/cc at 15°C was used.

2.2 Lubricants:

S.No.	Particulars	As recommended by the manufacturer	As used during the test
1.	Engine oil	SAE 15W40	As recommended
2.	Gearbox, differential, rear axle, final drive, hydraulic, steering and brake system	John Deere Hy. Guard	Oil originally filled in the tractor system was not changed
3.	Grease	John Deere high temperature/Extreme-pressure/Non-clay grease	Multipurpose grease

3. ESSENTIAL TESTS

3.1 SPECIFICATIONS

3.1.1 Tractor:

Make : John Deere
 Model : 5105
 Type : Four wheeled, Rear wheel driven, Unit Construction, General purpose, Agricultural tractor
 Month & Year of manufacture : 09/21
 Chassis number : 1PY5105DLMA019872
 Country of origin : India

3.1.2 Engine:

Make : John Deere
 Model : 3029DPY93
 Type : Four stroke, Liquid cooled, Naturally aspirated, Direct injection, Diesel engine.
 Serial number : PY3029D653976
 Year of manufacture : 2021
 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

Rated speed, (rpm):

- For PTO use : 2100
 - For drawbar use : 2100

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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-evaluative (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
7.1.1	PTO Performance :					
a)	Max. power under 2 h test, (kW) (Natural ambient condition)	Evaluative	Declared value to be achieved with a tolerance of: ± 5% for PTO power or engine power >26 kW, ± 10% for PTO power or Engine power ≤ 26 kW.	25.8 (D)	24.8	Yes
b)	Specific fuel consumption corresponding to maximum power, (g/kWh)	Evaluative	+ 10% Max.	272(D)	256	Yes
7.1.2	Safety features :					
a)	Guards against moving and hot parts	Evaluative	Belt drives, pulleys, silencer, hydraulics pipes(as per IS-12239 Part 2)	Meets the requirement		Yes
b)	Lighting arrangement	Evaluative	As per CMVR	Meets the requirement		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)	Does not meet the requirement		No
d)	Technical requirements for PTO shaft	Evaluative	Should meet the requirements of IS: 4931 (As amended from time to time)	Meets the requirement		Yes
e)	Dimensions of three point linkage	Non Evaluative	Should meet the requirements of IS: 4468 (Part-I) (As amended from time to time)	Meets the requirement		Yes
f)	Specifications of linkage drawbar	Evaluative	Should meet the requirements of IS 12953 (As amended from time to time)	Meets the requirement		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	14.90 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 applicable	--
7.1.3	Labelling of tractors (Provision of labelling plate):					
	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		5105	Yes
	3)	Month & Year of manufacture	Evaluative		09/21	Yes
	4)	Engine number	Evaluative		PY3029D653976	Yes
	5)	Chassis number	Evaluative		1PY5105DLMA019872	Yes
	6)	Declaration of PTO power, kW	Evaluative		25.8	Yes
7.1.4	Literature (Submission to test agency):					
(a)	Operator manual	Evaluative	The printed literature in booklet form should be provided as per IS 8132 and should submit along with the test sample	Provided	Provided	Yes
(b)	Parts Catalogue	Evaluative		Provided	Provided	Yes
(c)	Workshop/ Service manual	Evaluative		Provided	Provided	Yes
7.1.5	Fitment of Roll Over Protective Structure (ROPS): 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
7.1.6	Standard accessories	Evaluative	Trailer hitch, front tow hook, linkage drawbar should be provided with tractor	Provided	Provided	Yes
7.1.7	Accessories (Optional)	Non Evaluative	Ballast weights if fitted should meet the requirement of CMVR.	Not Provided	Not Fitted	Not Applicable

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7.2 CATEGORY OF BREAKDOWNS / DEFECTS (As per clause 5.0 of IS:12207- 2019) :					
S. No.	Category of Breakdown	Category (Evaluative / Non Evaluative)	Requirements as per IS: 12207-2019	As observed	Whether meets the requirement (Yes/No)
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 recorded as **24.8 kW** against the declaration of **25.8 kW**, which meets the requirement of IS: 12207-2019 with regard to tolerance limit.
- ii) The specific fuel consumption corresponding to maximum power was recorded as **256 g/kWh** against the declaration of **272 g/kWh** & which meets the requirement of IS: 12207-2019 with regard to tolerance limit.

7.4 Maintenance / Service Problems:

No noticeable maintenance or service problem was 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:

- i) Longitudinal distance from seat index point to centre of differential lock pedal has been observed as **225 mm**. It should be within **355 to 770 mm** as per IS: 12343-1998 (Re-affirmed in January, 2019).
- ii) Longitudinal distance from seat index point to centre of steering control wheel has been observed as **390 mm**. It should be within **425 to 525 mm** as per IS: 12343-1998 (Re-affirmed in January, 2019).
- iii) Spark arrester should be provided in the exhaust system as per the requirement of IS: 12239 (Part-2)-1999 (Re-affirmed in January, 2019).
- iv) In engine revolution gauge, colour zone has not been provided as per IS: 6283 (Part-1) – 2006 (Re-affirmed in January, 2019) & IS: 6283 (Part-2) – 2007 (Re-affirmed in January, 2019).
- v) The working clearance between the range selection lever and mudguard has been measured as **35 mm** against the minimum requirement of **70 mm** as per IS: 12239 (Part-2) – 1999 (Reaffirmed in January, 2019).

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7.6 Adequacy of Literature:




7.6.1 The following literatures were supplied with the test tractor 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) Workshop/Repair Technical manual Part 1, 2 & 3 (For 5036D, 5038D, 5039D, 5042D, 5045D, 5050D, 5050D V8, 5105, 5105 4WD V2, 5205 & 5005 tractor models)
- c) Parts Catalogue Part 1 & 2 (For 5105 & 5105 4WD V2 tractor model)

7.6.2 Literatures submitted by applicant are found adequate as per IS:8133-1999 (Reaffirmed in 2019), **except the following:**

- i) Oil change period of transmission, hydraulic, brake and steering system given in Operator's Instruction book / Manual does not match with specifications submitted by applicant.

TESTING AUTHORITY:

C.V. CHIMOTE TEST ENGINEER	
Y.K.RAO SENIOR AGRICULTURAL ENGINEER	
P.K. PANDEY DIRECTOR	

Draft test report is compiled by: **Poonam Khurasia**, Senior Technical Assistant

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8. APPLICANT'S COMMENTS

Para No.	Our Reference	Applicant's comments
8.1	7.5 (i), (ii) & (v), 7.6.2	Your valuable comments & suggestions for improvements are well taken. Under our policy of continuous product improvement these aspects are further being looked into & will try to eliminate these deviations soon, whenever necessary.

ANNEXURE – I

TRACTOR RUN HOURS DURING TEST

A.	LABORATORY AND TRACK TESTS	HOURS
1.	Running-in	22.00
2.	PTO performance test	3.00
3.	Nominal speed test	0.68
B.	Miscellaneous test and other run hours including idle run, transportation, trials and preparation for test	2.67
TOTAL:		28.35