

(यह परीक्षण रिपोर्ट 31/01/2028 तक वैध है / THIS TEST REPORT IS VALID UPTO 31/01/2028)



Make of Agricultural Tractor : John Deere
Model : 3036EN V2
Manufactured by : M/s. John Deere India Private Limited
Gat No. 166 - 167 & 271 - 291,
Off Pune - Nagar Road, Sanaswadi, Taluka
Shirur, Pune - 412 208
M/s. John Deere India Private Limited
Survey No. 501, Village - Khatamba Jamgod,
Dewas Bhopal Highway,
Dewas (Madhya Pradesh) - 455 115



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)

T-1699/2230/2023	JOHN DEERE, 3036EN V2 TRACTOR - INITIAL COMMERCIAL TEST
	THIS TEST REPORT IS VALID UPTO: 31/01/2028

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 15th 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: January	Test Report No.: T-1699/2230/2023	Year: 2023
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[C]	Tractor manufacturer's name and address	:	M/s. John Deere India Private Limited Gat No . 166 - 167 & 271 - 291, Off Pune - Nagar Road, Sanaswadi, Taluka Shirur, Pune - 412 208 M/s. John Deere India Private Limited Survey No. 501, Village - Khatamba Jamgod, Dewas Bhopal Highway, Dewas (Madhya Pradesh) – 455 115
[C]	Submitted for test by (Applicant)	:	The Manufacturer
[C]	Selected for test by	:	The Ministry vide OM No. 13-17/2021 - M&T (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	:	12
	-Transmission	:	08
[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

1.1 Identification:

1.1.1 Denomination

[C]	Make of tractor	:	John Deere
[C]	Model (trade name)	:	3036EN V2
[C]	Type	:	Four-Wheel Driven, Standard Agricultural Tractor.
[C]	Month & year of manufacture	:	08/22
[D]	Country of origin	:	India

1.1.2 Numbers:

[D]	1 st Serial No. or prototype	:	1PY3036EANA009605
[C]	Serial No.	:	1PY3036EHNA010479

1.2 Engine:

[D]	Manufacturer's address	:	M/s. Yanmar Power Technology Co., Ltd. Plant – 1: 1009-2, Khwamichicho, Nagahama, Shinga 526-0111, Japan. Plant – 2: Plot No. I-5, 2nd. Avenue Road, Origins by Mahindra World City, North Chennai, Eliambedu Village, Ponneri Taluk, Tiruvallur District, Tamilnadu, Pin 601206, India
[C]	Make	:	Yanmar Power Technology Co., Ltd. Japan
[C]	Model	:	3TNV88-KJPT
[C]	Type	:	Four stroke, naturally aspirated, liquid cooled, direct injection, diesel engine.
[C]	Serial No.	:	CH3W17D224802

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3.4.1.2 Brake fade test:

Without ballasted tractor		At maximum attainable speed			
		499	430	390	375
	Braking device control force, (N)	499	430	390	375
	Mean deceleration, (m/sec ²)	3.17	2.80	2.59	2.50
	Stopping distance, (m)	6.10	6.91	7.45	7.73

Maximum deviation of tractor from its original course, (m) : None
 Abnormal vibration : None
 The brakes were heated by : Self braking

3.4.2 Parking brake test:

Particulars	18 percent slope		12 percent slope with trailer of 1.160 tonnes.	
	Up	Down	Up	Down
Braking device control force, (N)	480	515	437	494
Efficacy of parking brake	-----Effective-----			

Remarks: The applicant has not recommended any ballasting for road test. Hence, the brake fade test was conducted in Unballasted condition only.

4. OPTIONAL TEST RESULTS

As the applicant has not applied for any optional tests, therefore no optional tests was conducted.

5. REPAIRS

--None--

6. SUMMARY OF OBSERVATIONS, COMMENTS & RECOMMENDATIONS

6.1 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: 12207-2019 for acceptance of the tractor for the purpose of subsidies/NABARD financing are summarized as under:

Sl. 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
	MANDATORY TESTS: (As per Ministry's Office Memorandum No. 13-17/2021-M&T (I&P) dated 28th of July, 2022).					
6.1.1	PTO Performance:					
a)	Maximum power under 2 h test, (kW) (Natural ambient 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.	20.5 (D)	21.5	Yes
b)	Power at rated engine speed, (kW)	Non Evaluative	-do-	20.0 (D)	21.5	Yes
c)	Specific fuel consumption corresponding to maximum power, (g/kWh)	Evaluative	+ 10% max.	280 (D)	268	Yes

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1	2	3	4	5	6	7
d)	Maximum equivalent crankshaft torque, (Nm)	Non Evaluative	± 8%	108.4 (D)	94.3	No
e)	Back-up torque, percent	Evaluative	12 percent	12 (D) 12 (R)	29.0	Yes
f)	Maximum 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)	106	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.	116 (D)	103	Yes
g)	Engine oil consumption, (g/kWh)	Evaluative	Not exceeding 1% of SFC at max. Power under High ambient conditions.	2.74 Maximum (R)	0.46	Yes
h)	Smoke level, m ⁻¹	Evaluative	Maximum light absorption coefficient of 3.25 per meter or equivalent BOSCH No. 5.2 or 75 Hatridge value (As per CMVR).	3.25 per meter Maximum (R)	0.33	Yes
6.1.2	Drawbar performance:					
a)	Max. drawbar pull with ballast corresponding to 15 percent wheel slip, (kN)	Non Evaluative	Minimum 70% of static mass of tractor with ballast.	11.50 (D) 11.52 (R) Minimum	14.56	Yes
b)	Max. drawbar pull without ballasted corresponding to 15 percent wheel slip, (kN)	Evaluative	Minimum 70% of static mass of tractor without ballast or with standard ballast, as the case may be.	8.07 (D) 8.08 (R) Minimum	10.71	Yes
c)	Maximum drawbar power without ballast/ with standard 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.	15.37 (D) 16.1 (R) Minimum	17.1	Yes
d)	Maximum transmission oil temperature, (°C)	Evaluative	The declared value should not exceed the maximum value specified by oil company	110 (D)	81	Yes
6.1.3	Power lift and hydraulic pump performance:					
a)	Maximum lifting capacity throughout the range of lift, (kN):					
	1) At hitch points	Evaluative	Tolerance of ± 10%	8.92 (D)	8.36	Yes
	2) With the standard frame	Evaluative	The lift capacity should at least be 24 kg/PTO kW and it should be 21.5 kg/engine kW where the tractor is not provided with a PTO shaft.	8.33 (D) 5.06 (R) Minimum	6.35	Yes

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1	2	3	4	5	6	7
b)	Maximum drop in the height of the point of application of the force after each 5 minutes interval for a total duration of 30 Minutes, (mm)	Non Evaluative	The observed value should not exceed 50 mm	50 (D) Maximum	07	Yes
6.1.4	Brake performance at 25 kmph:					
a)	Maximum stopping distance at a force, equal to or less than 600 N on brake pedal with road ballast, (m):					
	1) Cold brake	Evaluative	10	10 (R)	5.96	Yes
	2) Hot brake	Evaluative	10	10 (R)	6.10	Yes
b)	Maximum force exerted on the brake pedal to achieve a deceleration of 2.5 m/s ² (N)	Evaluative	600	600 (R) Maximum	280 to 375	Yes
c)	Whether parking brake is effective at a force of 600 N at foot pedal (s) or 400 N at hand lever	Evaluative	Yes / No	Yes	Yes	Yes
6.1.5	OPTIONAL TESTS: As the applicant has not applied for any optional tests, therefore no optional tests was conducted.					
6.1.6	Safety features :					
a)	Guards against moving and hot parts	Evaluative	Belt drives, pulleys, silencer, hydraulic pipes [As per IS 12239 (Part2)]	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)	Not applicable (Tractors rear track width is less than 1150 mm)		--
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-2) (As amended from time to time)	Does not meet the requirement		No
f)	Specifications of linkage drawbar	Evaluative	Should meet the requirements of IS: 12953 (As amended from time to time)	Meets the requirement		Yes
g)	Swinging drawbar (wherever fitted)	Evaluative	Should meet the requirement 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, Km/h	Evaluative	Should not exceed 20 Km/h	19.43 (Meets the requirement)		Yes		
	2) Audible warning signal on tractor	Evaluative	As soon as the travelling speed in reverse gear reaches to 20 km/h, an audible warning signal on tractor shall be activated. The 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.	Not fitted		Not applicable		
6.1.7	Labelling of tractors (Provision of labelling plate):							
	1) Make	Evaluative	Should conform to the requirements of CMVR along with maximum PTO Power in kW and year of manufacture in numerical form. <table border="1" style="margin: 5px auto;"><tr><td>MM</td><td>YY</td></tr></table> Digit 01 – 12 in box No.1 for MM will represent the months and next two digits in box No.2 for YY will represent the year of Manufacturing.	MM	YY	John Deere		Yes
MM	YY							
	2) Model	Evaluative		3036EN V2		Yes		
	3) Month & Year of manufacture	Evaluative		08/22		Yes		
	4) Engine number	Evaluative		CH3W17D224802		Yes		
	5) Chassis number	Evaluative		1PY3036EHNA0 10479		Yes		
	6) Maximum PTO power, (kW)	Evaluative		20.5		Yes		
	7) Specific fuel consumption, g/kWh	Evaluative	280		Yes			
6.1.8	Literature (Submission to test agency):							
(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		
6.1.9	Fitment of Roll Over Protective Structures (ROPS):							
	For tractor having more than 1150 mm rear track width	Evaluative	ROPS should meet the requirement of IS:1182 or OECD code or equivalent International Standard	Not fitted (Tractors rear track width is less than 1150 mm)		Not applicable		
6.1.10	Standard Accessories	Evaluative	Trailer hitch, front tow hook, linkage drawbar should be provided with tractor	Provided		Yes		
6.1.11	Accessories (optional)	Non Evaluative	Ballast weight, if fitted, should meet the requirement of CMVR	Not fitted		Not applicable		

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6.2 CATEGORY OF BREAKDOWNS / DEFECTS (As per clause 5.0 of IS:12207-2019):					
S. No.	Category of break-downs	Category (Evaluative / Non Evaluative)	Requirements as per IS: 12207-2019	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 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 labeling of agricultural tractors (First revision) [IS:10273 -1987 (Reaffirmed Year 2019)] : Conforms
- ii) Agricultural tractors - Rear mounted power take-off - Types 1, 2 and 3 (third revision) [IS:4931-1995 (Reaffirmed Year 2019)] : Conforms
- iii) Agricultural wheeled tractors – Rear mounted three-point linkage: Part 1 Categories 1, 2, 3 & 4 (fourth revision) [IS:4468 (Part-2) – 1993 (Reaffirmed in Jan., 2019)] : **Does not conform**
- iv) Drawbar for agricultural tractors – Link type [IS 12953:1990 (Reaffirmed Year 2022)] : Conforms
- v) Agricultural tractors- Operator's seat technical requirement [IS12343 - 2021] : **Not applicable**
(Tractors rear track width is less than 1150 mm)
- vi) Guide for safety & comfort of operator of agricultural tractors:Part 1 General requirements (first revision):[IS 12239 (Part 1) - 2018] : **Does not conform**
- vii) Tractors and machinery for agriculture and forestry – Technical means for ensuring safety Part 2: Tractors (first revision) (IS 12239 (Part 2) 1999) (Reaffirmed Year 2019)] : **Does not conform**
- viii) Guide lines for location and operation of operator controls on agricultural tractors and machinery [IS: 8133 - 2021] : **Does not conform**
- ix) Tractors and machinery for agriculture and forestry, powered lawn and garden equipment - Symbols for operator controls and other displays Part2 Symbols for agricultural tractors and machinery [IS: 6283(Part-1) - 2006 (Reaffirmed Year 2019) and IS: 6283 (Part-2) – 2007 (Reaffirmed Year 2019)] : Conforms
- x) Agricultural Tractors and Machinery-Lighting device for travel on public roads (IS:14683-1999) (Reaffirmed Year 2019)] : Conforms

6.4 Salient Observations:

6.4.1 Laboratory tests:

6.4.1.1 PTO Performance:

The maximum equivalent crankshaft torque was observed as 94.3 Nm against the declaration of 108.4 Nm and does not meet the requirement of IS: 12207-2019. Even though this parameter is categorized as 'Non-Evaluative', as per IS:12207-2019, yet for the sake of improvement it would be advisable to look into the matter to make it conforming to the requirement.

6.4.1.2 Operator's work place:

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

- i) Vertical retainers on inner side of clutch pedal was not provided.
- ii) Width of foot step has been measured as 125 mm against the requirement of 200 mm.
- iii) Spark arresting device has not been provided in the exhaust system.

Therefore, all of the above should be looked into for necessary corrective action.

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6.4.1.3 Three point linkage:

The distance from end of power take-off to centre of lower hitch point (lower links in horizontal position) was measured 530 mm against the required range of 300 to 375 mm which does not meet the requirements of IS:4468 (Part-2) – 1993. This should be looked into for corrective action.

6.4.1.4 PTO master shield:

The dimensions of “n” & “p” of PTO master shield does not meet the requirement of IS: 4931-1995. This should be looked into for necessary corrective action.

6.5 Maintenance / Service Problems:

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

6.6 Recommendation with regard to safety on tractor:

- i) Identification of differential lock by colour has not been provided as per the requirement as laid down in Table – 5 of IS: 8133-2021.
- ii) The working clearance between 2WD/4WD engaging lever & LHS fender has been measured as 40 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: -

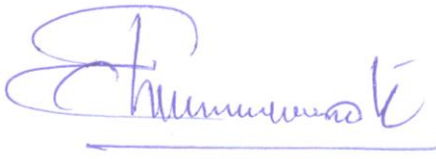

- a) Operator’s Manual for “John Deere 3028 EN, 3036 EN, 3036 EN V2 & 3036 EN V3” tractor model.
- b) Parts catalogue for “John Deere 3036EN V2, 3036EN V3 & 3036EN V4” tractor model.
- c) Workshop/repair technical manual Part – I, Part – II & Part – II for “John Deere 3028EN, 3028EN V2, 3036E, 3036EN, 3036EN V2 & 3036EN V3” tractor model.

6.7.2 The operator manual may be brought out for the guidance of users and service personnel as per IS: 8132-1999 incorporating, inter alia, the following:

- i) Recommended ballast masses for different operations.
- ii) Recommended gross mass of trailer for haulage operation.
- iii) Matching implements for tractor.
- iv) Fuel saving tips.

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

TESTING AUTHORITY

<p>C. V. CHIMOTE TEST ENGINEER</p>	
<p>P.K. PANDEY DIRECTOR</p>	

Draft Test Report is compiled by **Vithato Keyho**, Senior Technical Assistant.

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7. APPLICANT'S COMMENTS

Para No.	Our reference	Applicant's comments
7.1	6.4.1.2 (i), 6.4.1.4 & 6.7.2	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	12.9
3.	Power lift and hydraulic pump performance test	0.8
4.	Drawbar performance test	15.9
5.	Brake performance test	0.8
6.	Nominal speed test	1.5
B.	Miscellaneous test and other run hours including idle run, transportation, trials and preparation for test.	7.3
TOTAL:		39.2