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**JOHN DEERE, 5055E V3 TRACTOR**



भारत सरकार  
कृषि मंत्रालय  
(कृषि एवं सहकारिता विभाग)

GOVERNMENT OF INDIA  
MINISTRY OF AGRICULTURE  
(DEPARTMENT OF AGRICULTURE & CO-OPERATION)  
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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 0.836 g/cc at 15°C was used.

**2.2 Lubricants:**

Particulars		As recommended by the manufacturer	As used during the test
1.	Engine oil	SAE 15W-40	As recommended
2.	Transmission, Hydraulic, Steering and brake systems oil	John Deere Hy Guard	Oil originally filled in the tractor was not changed
3.	Grease	John Deere high temperature Extreme pressure Non-clay grease	Servo grease MP

## 3. ESSENTIAL TEST

### 3.1 SPECIFICATIONS

	<u>Base Model</u>	<u>Variant Model</u>
<b>3.1.1 Tractor:</b>		
Make	: John Deere	John Deere
Model	: 5055E V2	5055E V3
Type	: Four wheeled, rear wheel driven, standard Agricultural Tractor	
Year of manufacture	: BJ-A (September, 2010)	BL-B (November, 2011)
Chassis number	: 1PY5055EJAA000002	1PY5055ECBA006413
Country of Origin	: India	India
<b>3.1.2 Engine:</b>		
Make	: John Deere	John Deere
Model	: 3029HPY36	3029HPY36
Type	: Four stroke, turbocharged, liquid cooled, direct injection, diesel engine.	
Serial number	: PY3029H000666	PY3029H007148
<b>Engine speed (Manufacturer's recommended production setting), (rpm):</b>		
- Maximum speed at no load,	: 2575 to 2650	2575 to 2650
- Low idle speed	: 800 to 875	800 to 875
- Speed at maximum torque	: 1700 to 1900	<b>1200 to 1500</b>
<b>Rated speed, (rpm):</b>		
- For PTO use	: 2400	2400
- For drawbar use	: 2400	2400
<b>3.1.3 Cylinder &amp; Cylinder Head:</b>		
Number	: Three	Three
Disposition	: Vertical, inline	Vertical, inline
Bore/stroke, (mm)	: 106.5 / 110	106.5 / 110
Capacity as specified by the applicant, (cc)	: 2940	2940



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1	2	3	4	5	6
	g)	IS:12239 (Pt-II)	Did not conform	Does not conform	No change
	h)	IS:8133	Conformed	Conforms	No change
	i)	IS: 6283	Did not conform	Does not conform	No change
	j)	IS:14683	Conformed	Conforms	No Change
21.	xxi)	Final Reduction:	Same configuration in <b>base &amp; variant</b> models (refer para 3.1.12.6).		No change
22.	xxii)	Type of fuel Injection pump:	Same configuration in <b>base &amp; variant</b> models (refer para 3.1.4.5) <b>except the following.</b>		No change
		Model group combination number of fuel injection pump	DB4327-X3610	M1 DB4327-8166	Changed
		Fuel injection timing	6.5 ± 1 degree before TDC	8.0 ± 1 degree before TDC	Changed
23.	<b>Change related to statutory/ regulatory requirements (As per Table 4):</b>				
	a)	Engine operating principle (spark/ compression ignition, two/four stroke)	Compression Ignition, 4 stroke	Compression Ignition, 4 stroke	No change
	b)	Number & arrangement of cylinders	Three vertical inline	Three vertical inline	No change
	c)	PTO power (kW)	36.4	36.4	No change
	d)	Engine displacement (cc)	2940	2940	No change
	e)	Rated engine speed (rpm)	2400	2400	No change
24.	<b>Other changes</b>				
	Model group combination number of fuel injectors				
		- Holder number	140410 39012	280411 39012	Changed
		- Nozzle number	Italy 10-10 SDSLA 143, M 39472 A1-10	Italy 11-11 SDSLA 143, M 39472 A1-11	Changed
		Engine speed at maximum torque (rpm)	1700 to 1900 (1698 as observed)	1200 to 1500 (1100 as observed)	Changed

## 6. SUMMARY OF OBSERVATIONS, COMMENTS & RECOMMENDATIONS

- 6.1 On the basis of test conducted the performance results have been summarized as evaluative (mandatory) and non – evaluative (not mandatory) parameters applicable for qualifying Minimum Performance Criteria as per clause-4 table-1 of Indian Standard 12207: 2008 for acceptance of tractor for the purpose of subsidies/NABARD financing for the applicable features for this tractor model.

Sl. No.	Characteristic	Category (Evaluative / Non Evaluative)	Requirements as per IS: 12207-2008	Values declared by the applicant/ requirement		As observed		Whether Variant model meets the requirements (Yes/No)
				Base model	Variant Model	Base model	Variant model	
1	2	3	4	5 a	5 b	6 a	6 b	7
6.1.1	<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: -5 / +10% for PTO power >35hp; -7.5/+10% for PTO power ≤ 35 hp	36.4 (D)	36.4 (D)	35.6	35.9	Yes

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1  
b)  
c)  
d)  
e)  
f)  
6.1.2  
6.2  
6.2.1  
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1	2	3	4	5 a	5 b	6 a	6 b	7
b)	Power at rated engine speed, (kW)	Non Evaluative	-do-	36.4 (D)	36.4 (D)	35.6	35.9	Yes
c)	Specific fuel consumption corresponding to maximum power, (g/kWh)	Non Evaluative	± 5%	280 (D)	280	300	285	Yes
d)	Maximum equivalent crankshaft torque, (Nm)	Non Evaluative	± 8%	203 (D)	203 (D)	172.8	200.2	Yes
e)	Back-up torque, percent	Non Evaluative	7 percent, min.	10 (D)	10 (D)	22.3	38.5	Yes
f)	Smoke level	Evaluative	Maximum light absorption coefficient of 3.25 per metre or equivalent BOSCH No. 5.2 or 75 Hatridge value (As per CMVR)	3.25 per metre (R)		0.30	0.35	Yes
<b>6.1.2 Labeling of tractors (Provision of labeling plate):</b>								
1)	Make	Evaluative	Should conform to the requirements of CMVR along-with declared value of PTO HP	John Deere		John Deere		Yes
2)	Model	Evaluative		5055E V2		5055E V3		Yes
3)	Year of manufacture	Evaluative		BJ-A(September, 2010)		BL-B(November, 2010)		Yes
4)	Engine serial number	Evaluative		PY3029H007 148		PY3029H00 7148		Yes
5)	Chassis number	Evaluative		1PY5055EJA A000002		1PY5055EC BA006413		Yes
6)	Declaration of PTO power, kW	Evaluative		36.4		36.4		Yes

**6.2 Salient Observations:****6.2.1 Laboratory tests:****6.2.1.1 PTO Performance:**

- i) The backup torque is 38.5 %.
- ii) The maximum power was observed as **36.9 kW** against the declaration of **36.4 kW**, which meet the requirement of IS: 12207-2008 with regard to tolerance.
- iii) The specific fuel consumption corresponding to maximum power was measured as **284 g/kWh** against the declaration of **280 g/kWh**, which meets the requirement of IS:12207-2008 with regard to tolerance.

**6.2.1.2 Three Point Linkage:**

- i) Diameter of hole for upper and lower hitch point meets the requirements of Cat-II. Whereas, the width of ball of upper hitch points meets the requirement of Cat-II and the width of ball of lower hitch points meets the requirement of Cat-I. This should be looked into for necessary corrective action.
- ii) Some of the parameters conform to Cat I and some of them conform to Cat. II. Keeping in view the spirit of standardization, necessary improvements may be incorporated.



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**6.2.1.3 Linkage Drawbar:**

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

**6.2.1.4 Operator's seat:**

- i) Width of seat does not meet the requirement of IS: 2343-1988. This should be looked into for necessary corrective action.
- ii) Longitudinal distance from seat index point to the center of differential lock pedal.

**6.2.1.5 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 symbol for the color zones for the engine revolution gauge, oil lubricant, type & frequency & cautionary notice has not been provided. This needs to be looked into for necessary corrective action.

**6.2.1.6 Location and operation of operator's control:**

- i) The working clearance around the position lever to draft control gear selector lever was observed as 40 mm against the minimum requirement of 70 mm as per per IS: 12239 (Part 2)-1996 This should be looked into for necessary corrective action.

**6.3 Maintenance / Service problems:**

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

**6.4 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) The working clearance around position control lever does not meet the requirement of IS: 12239 (part-2)-1999.
- iii) Provision of front towing hook
- iv) "Minimum cautionary notice" as per clause 11.2 of IS:12239 (part-2)-1999

**6.5 Adequacy of Literature:**

**6.5.1** The following literatures were supplied with the test tractor for reference during the test.

- a) Operator's manual (For 5055E, 5055E V2, 5055E V3, 5055E Creeper & 5055E 4WD model tractor models).
- b) Technical manual (For 5055 E, 5055E V2, 5055E V3, 5055E Creeper, 5055E 4 WD etc. tractor models).
- c) Parts Catalogue (For 5055 E, 5055E V2 & 5055E V3 tractor models).



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6.5.2 The supplied literature was found adequate. However, these literatures should be brought out in national as well as other regional languages of India for guidance of users.

The results of the tests carried out on variant model "John Deere 5055E V3" have been compared with those on base model "John Deere 5055E V2" and found within the limit, as specified in Indian Standard:12207-2008.

**TESTING AUTHORITY:**

**J.J.R. NARWARE**  
SENIOR AGRICULTURAL ENGINEER

**V.N. KALE**  
DIRECTOR

Test Report compiled by Shri. Chanchlesh Singh Raghuwanshi, Senior Technical Assistant

**7. APPLICANT'S COMMENTS**

Para No.	Our Reference	Applicant's comments
7.1	6.2.1.2 & 6.2.1.3	Most of the Indian customers use implements fitted with pins of bigger size. Hence, we have to provide with balls suiting the pins (Cat-II) though the other parameters call for conformity with Cat-I.
7.2	6.2.1.4 & 6.2.1.6	Shall be taken up with operator station changes.
7.3	6.2.1.5	We have taken corrective action and will be implemented on production tractors.



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ANNEXURE -I

TRACTOR RUN HOURS DURING TEST

A.	LABORATORY AND TRACK TESTS:	HOURS
1.	Running-in	--
2.	PTO performance test	6.8
3.	Nominal speed test	1.3
B.	Miscellaneous test and other run hours including idle run, transportation, preparation for test and trial runs.	0.7
	<b>TOTAL:</b>	<b>8.8</b>