



## JOHN DEERE 5055E TRACTOR



भारत सरकार

### GOVERNMENT OF INDIA

कृषि मंत्रालय (कृषि एवं सहकारिता विभाग, मशीनीकरण एवं प्रोद्योगिकी प्रभाग)

Ministry of Agriculture (Deptt. of Agri. & Co-op, Mechanization & Technology Division)

**केन्द्रीय कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान**

**CENTRAL FARM MACHINERY TRAINING & TESTING INSTITUTE**

**(An ISO : 9001-2008 Certified Institute)**

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## 2. SPECIFICATIONS

## 2.1 Tractor:

	Previous Sample	Present Sample
Make	: John Deere	John Deere
Model	: 5055E	5055E
Type	: Four wheeled, Rear wheel-driven, Standard Agricultural Tractor	
Year of manufacture	: BJ-A (Sept, 2010)	BA-C (Jan, 2012 )
Chassis number	: 1PY5055EKAA000001	1PY5055ETCA007959
Country of Origin	: India	India

## 2.2 Engine:

Make	: John Deere	John Deere
Model	: 3029HPY36	3029HPY36
Type	: Four strokes, Turbo charged, liquid cooled, direct injection, diesel engine.	
Serial number	: PY3029H000667	PY3029H008668
<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	1200 to 1500
<b>Rated speed, (rpm):</b>		
- For PTO use	: 2400	2400
- For drawbar use	: 2400	2400

## 2.3 Cylinder &amp; Cylinder Head:

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
Compression ratio	: 18.7 : 1	18.7 : 1
Type of cylinder head	: Monoblock	Monoblock
Type of cylinder liners	: Wet, replaceable	Wet, replaceable
Type of combustion chamber	: Direct injection	Direct injection
Arrangement of valves	: Overhead	Overhead
<b>Valve clearance (cold):</b>		
- Inlet valve, (mm)	: 0.35	0.35
- Exhaust valve, (mm)	: 0.45	0.45

## 2.4 Fuel System:

Type of fuel feed system	: Force feed	Force feed
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## 2.4.1 Fuel tank:

Capacity, ( l )	: 70.0	69.8
Location	: Behind operator's seat	
Provision for draining of sediments / water	: Not provided	Not provided
Material of fuel tank	: Borialis (apa)	Borialis (apa)

## 2.4.2 Fuel feed pump:

	: Vane type pump inbuilt with fuel filter.	Vane type pump inbuilt with fuel filter.
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### 6. SUMMARY OF OBSERVATIONS, COMMENTS & RECOMMENDATIONS

6.1 Evaluative (mandatory) / Non-evaluation (Non-mandatory) parameter applicable for qualifying Minimum Performance criteria as per Clause-4 (Table-1) of IS: 12207-2008 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: 12207-2008	Values declared by the applicant (D) / Requirement (R)		As observed		Whether meets the require- ments (Yes/No.)
				Previous Sample	Present Sample	Previous Sample	Present Sample	
1	2	3	4	5	6	7	8	9
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)	37.0	36.0	Yes
b)	Power at rated engine speed, (kW)	Non Evaluative	-do-	36.4(D)	36.4(D)	37.0	35.6	Yes
c)	Specific fuel consumption corresponding to maximum power, (g/kWh)	Non Evaluative	± 5%	280(D)	280(D)	294	284	Yes
d)	Maximum equivalent crankshaft torque, (Nm)	Non Evaluative	± 8%	203(D)	203(D)	191.2	193.4	Yes
e)	Back-up torque, percent	Non Evaluative	7 percent, min.	10(D)	10(D)	30.2	29.7	Yes
f)	<b>Maximum operating temperature (°C)</b>							
1)	Engine oil	Non 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)	135(D)	117	120	Yes
2)	Coolant (liquid)	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.	118(D)	118(D)	94	100	Yes



T-881/1395/2013

JOHN DEERE 5055E TRACTOR – Commercial  
(Supplementary) Test

1	2	3	4	5	6	7	8	9
g)	Engine oil consumption (g/kWh)	Evaluative	Not exceeding 1% of SFC at max. power under High ambient conditions.	3.12 (R)	3.12 (R)	0.61	0.62	Yes
h)	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 % (R)	3.25 % (R)	0.39	0.68	Yes

## 6.1.9 Safety features :

a)	Guards against moving and hot parts	Evaluative	As per CMVR	At present no requirements	---	--
b)	Lighting arrangement	Evaluative	As per CMVR	--	Provided	Yes

## 6.1.10 Labelling of tractors (Provision of labelling plate):

			Should conform to the requirements of CMVR along-with declared value of PTO HP	Previous Sample	Present Sample	
1)	Make	Evaluative		John Deere	John Deere	Yes
2)	Model	Evaluative		5055E	5055E	Yes
3)	Year of manufacture	Evaluative		BJ-A (Sept.,2010)	BA-C (Jan 2012)	Yes
4)	Engine serial number	Evaluative		PY3029H 000667	PY3029H00 8668	Yes
5)	Chassis serial number	Evaluative		1PY5055 ECAA 000001	1PY5055ET CA 007959	Yes
6)	Declaration of PTO power, kW (hp)	Evaluative		36.4 (49.5)	36.4 (49.5)	Yes

## 6.2 Conformity with following IS:

i)	Guide lines for declaration of power and specific fuel consumption and labelling of agricultural tractors (First revision) [IS 10273:1987 (Reaffirmed in March, 2009)]	Previous Sample	Conforms	Present Sample	Conforms
ii)	Agricultural wheeled tractors - Rear mounted three-point linkage: Part 1 Categories 1, 2, 3 & 4 (fourth revision) [IS 4468(Part-1):1997/ISO 730-1:1994 (Reaffirmed in March, 2007)]	Does not conform		Conforms	
iii)	Drawbar for agricultural tractors – Link type [IS 12953:1990 (Reaffirmed in March, 2007)]	Conforms		Conforms	
iv)	Guide for safety & comfort of operator of agricultural tractors: Part 1 General requirements (first revision) : [IS 12239(PT-1) 1996/ISO 4254-1:1989 (Reaffirmed in March, 2007)]	Does not conform		Does not conform	



T-881/1395/2013

JOHN DEERE 5055E TRACTOR – Commercial  
(Supplementary) Test

v)	Tractors and machinery for agriculture and forestry, powered lawn and garden equipment – Symbols for operator controls and other displays [IS: 6283 (Part-1)-2006 (Reaffirmed in March, 2009) and IS: 6283 (Part 2)-2007 (Reaffirmed in March, 2009)]	Does not conform	Does not conform
vi)	Tractors and machinery for agriculture and forestry – Technical means for ensuring safety Part 2: Tractors (first revision) [(IS 12239 (PT-2) 1999) (Reaffirmed in March, 2009)]	Does not conform	Conforms
vii)	Guide lines for location and operation of operator controls on agricultural tractors and machinery (first revision) [(IS: 8133 – 1983) (Reaffirmed in March, 2009)]	Conforms	Conforms
viii)	Agricultural Tractor & Machinery Lighting device for travel on public roads [(IS: 14683-1999) (Reaffirmed in March, 2009)]	Conforms	Conforms

## 6.3 Salient Observations:

## 6.3.1 Laboratory tests:

## 6.3.1.1 PTO Performance:

- i) The backup torque is 29.7 %.
- ii) The specific fuel consumption corresponding to maximum Power was measured as 284 g/kWh against the declaration of 280 g/kWh and meet the requirements of IS: 12207-2008 with regard to tolerance.

## 6.3.1.4 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.

## 6.3.1.5 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.

## 6.3.1.6 Power take-off shaft:

- The dimension "dØ" of the PTO does not meet the requirements of IS: 4931-1995. This should be looked into for necessary corrective action.

## 6.3.1.7 Operator's seat:

- i) Longitudinal adjustment provided on operator's seat i.e. forward and rearward from the mid position was observed as ±72 mm against the minimum and optimum requirement of ± 25 mm and ±100 mm respectively. In view of enhancing comfort level of the operator, necessary improvements may be incorporated.

## 6.3.1.8 Location and operation of operator's control:

- Working clearance between gear shift lever (in park position) and the mudguard does not meet the requirement of the IS: 12239 (Part-2)-1996. This should be looked into for necessary corrective action.

## 6.3.1.9 Symbols of operator's controls and other displays:

- Some of the controls / display such as grease lubricant frequency, oil lubricant type & frequency are not identifiable with the symbols as per IS: 6283 (Part 1&2)-1998. This needs to be looked into for necessary corrective action.

## 6.3.1.10 Labelling Plate:

- The maximum PTO power has been specified as 36.4 kW (49.5 hp) vide labelling plate of the tractor. As per the conversion, the power of 36.4 kW is equals to 48.8 hp and equals to 49.5 hp. This needs to be looked into for necessary corrective action.



T-881/1395/2013

**JOHN DEERE 5055E TRACTOR – Commercial  
(Supplementary) Test**

**6.4 Maintenance / Service problems:**

No noticeable maintenance and service problems was observed during the test. However, provision for draining of sediments/water should be provided in the fuel system.

**6.5 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 of spark arresting device in exhaust system.
- ii) "Minimum cautionary notice" as per clause 11.2 of IS:12239 (part-2)-1999
- iii) Master shield for PTO shaft
- iv) The working clearance around main gear shifting lever does not meet the requirement of IS: 12239 (part-2)-1999.
- v) Provision of front tow hook.

**6.6 Adequacy of Literature:**

**6.6.1** 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 tractors).
- b) Technical manual (For 5055E, 5055E V2, 5055E V3, 5055E Creeper, 5055E 4 WD etc. tractors).
- c) Parts Catalogue (For 5055E & 5055E V2 tractors).

**6.6.2** 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.

**7. CITIZEN CHARTER**

Time frame for Testing & Evaluation as per Citizen Charter	Duration of Test	Whether the Test Report is released within the time frame given in Citizen Charter	Remarks
4 Months	5 Months (February, 2013 to June, 2013)	No	Delay due to control panel of dynamometer was not working during PTO test

**TESTING AUTHORITY:**

**H. L. YADAV  
SENIOR AGRICULTURE ENGINEER**

**C. R. LOHI  
DIRECTOR**

Test Report compiled by Shri Pratyush Satya, Senior Technical Assistant.



T-881/1395/2013

**JOHN DEERE 5055E TRACTOR – Commercial  
(Supplementary) Test**

**8. Applicant's Comments**

Para No.	Our Reference	Applicant's comments
8.1	6.31.4,5	Most of 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
8.2	6.3.1.6	Already corrected the dimension "dø" in the PTO shaft and implemented in the production.
8.3	6.3.1.7	Shall be taken up with operator station changes.

**ANNEXURE – I****TRACTOR RUN HOURS DURING TEST**

A.	LABORATORY AND TRACK TESTS:	HOURS
1.	Running-in	13.06
2.	PTO performance test	0.10
B	Miscellaneous test and other run hours including idle run, transportation, trials and preparation for test	
	<b>TOTAL:</b>	<b>13.16</b>