NEBRASKA TRACTOR TEST 2027
JOHN DEERE 5101E LIMITED DIESEL
12 SPEED
CHASSIS SERIAL NUMBERS 340000 AND HIGHER

Location of tests: Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln Nebraska 68583-0832

Dates of tests: May 10 - 17, 2012

Manufacturer: John Deere Commercial Products Inc., 700 Horizon South Parkway, Grovetown Ga. USA, 30813

POWER TAKE-OFF PERFORMANCE

Power HP *(kW)*	Crank shaft speed rpm	Gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—543 rpm)					
90.42 *(67.42)*	2398	5.76 *(21.81)*	0.448 *(0.273)*	15.69 *(3.09)*	
Maximum Power - (1 hour)					
93.85 *(69.98)*	2200	5.63 *(21.30)*	0.422 *(0.257)*	16.68 *(3.28)*	
VARYING POWER AND FUEL CONSUMPTION					
90.42 *(67.42)*	2398	5.76 *(21.81)*	0.448 *(0.273)*	15.69 *(3.09)*	Air temperature
78.90 *(58.84)*	2473	5.38 *(20.36)*	0.480 *(0.292)*	14.67 *(2.89)*	77°F *(24°C)*
60.30 *(44.97)*	2514	4.60 *(14.67)*	0.536 *(0.326)*	13.12 *(2.58)*	Relative humidity
40.65 *(30.31)*	2545	3.57 *(13.50)*	0.617 *(0.375)*	11.40 *(2.24)*	37%
20.60 *(15.36)*	2574	2.51 *(8.00)*	0.856 *(0.520)*	8.22 *(1.62)*	Barometer
0.95 *(0.71)*	2597	1.56 *(5.89)*	11.516 *(7.005)*	0.61 *(0.12)*	28.58"Hg *(96.78 kPa)*

Maximum Torque 253 lb.-ft. *(343 Nm)* at 1701 rpm
Maximum Torque Rise - 27.7%
Torque rise at 1900 rpm - 21%
Power increase at 2200 rpm - 3.8%

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Engaged dB(A)	Front Wheel Drive Disengaged dB(A)
At no load in 6th(B2) gear	78.4	78.4
Transport in 12th (C4) gear		79.8
Bystander in 12th (C4) gear		84.4

TIRES AND WEIGHT	Tested Without Ballast
Rear Tires–No., size, ply & psi *(kPa)*	Two 18.4-30;8;12 *(85)*
Front Tires–No., size, ply & psi *(kPa)*	Two 12.4-24;8;14 *(95)*
Height of Drawbar	18.5 in *(470 mm)*
Static Weight with operator– Rear	4405 lb *(1998 kg)*
– Front	3110 lb *(1411 kg)*
– Total	7515 lb *(3409 kg)*

FUEL, OIL and TIME: Fuel No. 2 Diesel **Specific gravity converted to 60°/60° F *(15°/15°C)*** 0.8448 **Fuel weight** 7.034 lbs/gal *(0.843 kg/l)* **Oil SAE** 15W40 **API service classification** CF/CH-4 **Transmission and hydraulic lubricant** John Deere Hy-Gard Fluid **Front axle lubricant** SAE 80W90 API GL-5 **Total time engine was operated** 6.0 hours

ENGINE: Make John Deere Diesel **Type** four cylinder vertical with turbocharger and air to air aftercooler **Serial No.** *PE4045L857425* **Crankshaft** lengthwise **Rated engine speed** 2400 **Bore and stroke** 4.19" x 5.00" *(106.4 mm x 127.0 mm)* **Compression ratio** 19.0 to 1 **Displacement** 276 cu in *(4517 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** one paper element and one polyester felt element **Oil filter** one full flow cartridge **Oil cooler** radiator for transmission and hydraulic oil **Fuel filter** one paper element and sediment bowl **Fuel cooler** radiator for pump return fuel **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** one thermostat and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate: 37.6 - 41.4 lb/h *(17.1 - 18.8 kg/h)* **High idle:** 2575 - 2650 rpm **Turbo boost:** nominal 10.9 - 13.8 psi *(75 - 95 kPa)* as measured 12.2 psi *(84 kPa)*

CHASSIS: Type front wheel assist **Serial No.** *1LV5101ETBY440078* **Tread width** rear 55.8" *(1417 mm)* to 71.7" *(1820 mm)* front 52.8" *(1340 mm)* to 75.0" *(1904 mm)* **Wheelbase** 85.7" *(2178 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph *(km/h)*** first 1.04 *(1.68)* second 1.42 *(2.29)* third 1.94 *(3.13)* fourth 2.60 *(4.19)* fifth 3.02 *(4.86)* sixth 4.11 *(6.61)* seventh 5.60 *(9.02)* eighth 7.51 *(12.08)* ninth 8.72 *(14.04)* tenth 11.87 *(19.11)* eleventh 16.20 *(26.08)* twelfth 21.71 *(34.94)* reverse 1.14 *(1.84)*, 1.55 *(2.50)*, 2.12 *(3.41)*, 2.84 *(4.57)*, 3.29 *(5.30)*, 4.48 *(7.21)*, 6.11 *(9.84)*, 8.19 *(13.18)*, 9.51 *(15.31)*, 12.95 *(20.84)*, 17.68 *(28.45)*, 23.68 *(38.11)* **Clutch** single wet disc operated by foot pedal **Brakes** single wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 2385 engine rpm or 540 rpm at 1721 engine rpm **Unladen tractor mass** 7340 lb *(3329 kg)*

HYDRAULIC PERFORMANCE

CATEGORY: II		
Quick Attach: None		
OECD Static test		
Maximum force exerted through whole range:	3213 lbs	*(14.3 kN)*
i) Sustained pressure of the open relief valve:	2902 psi	*(200 bar)*
ii) Pump delivery rate at minimum pressure and rated engine speed:	17.3 GPM	*(65.3 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	15.7 GPM	*(59.5 l/min)*
Delivery pressure:	2515 psi	*(173 bar)*
Power:	23.1 HP	*(17.2 kW)*

THREE POINT HITCH PERFORMANCE

Observed maximum pressure psi. *(bar)*	2830 *(195)*
Location:	remote outlet
Hydraulic oil temperature: °F *(°C)*	148 *(64)*
Location:	pump inlet
Category:	II
Quick attach:	none

SAE Static Test—System pressure 2520 psi *(174 Bar)*

Hitch point distance to ground level in. *(mm)*	8.0 *(203)*	15.0 *(381)*	22.0 *(559)*	29.0 *(737)*	36.0 *(914)*
Lift force on frame lb	4694	4829	4685	4266	3596
" " " " " " *(kN)*	*(20.9)*	*(21.5)*	*(20.8)*	*(19.0)*	*(16.0)*

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

NOTE: The performance figures on this report apply to tractors with chassis serial numbers 340000 and higher.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 107°F *(41°C)*.

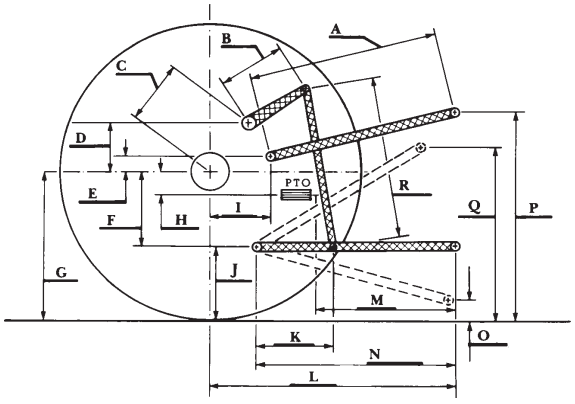
We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **2027**, July 2, 2012.

Roger M. Hoy
Director

M.A. Hanna
P.J. Jasa
J.D. Luck
Board of Tractor Test Engineers

	SAE Test		OECD Test	
	inch	*mm*	inch	*mm*
A	23.2	*590*	24.1	*613*
B	11.0	*280*	11.0	*280*
C	14.0	*356*	14.0	*356*
D	12.2	*311*	12.2	*311*
E	11.2	*284*	11.2	*284*
F	6.5	*165*	6.5	*165*
G	27.4	*695*	27.4	*695*
H	0.2	*4*	0.2	*4*
I	15.1	*384*	15.1	*384*
J	20.9	*530*	20.9	*530*
K	16.7	*424*	16.7	*424*
L	39.2	*996*	39.2	*996*
M	22.4	*570*	22.4	*570*
N	32.9	*836*	32.9	*836*
O	8.0	*203*	8.0	*203*
P	40.9	*1040*	44.9	*1140*
Q	34.0	*864*	34.0	*864*
R	20.8	*527*	20.8	*527*

HITCH DIMENSIONS AS TESTED - NO LOAD



Shiftable PTO Performance

Economy mode
540 PTO rpm @1720 engine rpm

Power HP *(kW)*	Crank shaft speed rpm	Gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*
58.10 *(43.33)*	1722	3.56 *(13.49)*	0.431 *(0.263)*	16.31 *(3.21)*
43.50 *(32.44)*	1725	2.82 *(10.68)*	0.456 *(0.278)*	15.42 *(3.04)*
28.90 *(21.55)*	1724	2.00 *(7.56)*	0.486 *(0.296)*	14.47 *(2.85)*
14.55 *(10.85)*	1723	1.32 *(4.99)*	0.637 *(0.388)*	11.03 *(2.17)*
1.00 *(0.75)*	1728	0.76 *(2.89)*	5.370 *(3.269)*	1.31 *(0.26)*

Normal mode
540 PTO rpm @2385 engine rpm

Power HP *(kW)*	Crank shaft speed rpm	Gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*
58.25 *(43.44)*	2389	4.18 *(15.83)*	0.505 *(0.307)*	13.93 *(2.74)*
43.25 *(32.25)*	2376	3.39 *(12.82)*	0.551 *(0.335)*	12.77 *(2.51)*
28.90 *(21.55)*	2379	2.62 *(9.93)*	0.638 *(0.389)*	11.02 *(2.17)*
14.50 *(10.81)*	2380	1.91 *(7.22)*	0.925 *(0.563)*	7.60 *(1.50)*
0.90 *(0.67)*	2383	1.30 *(4.94)*	10.194 *(6.206)*	0.69 *(0.14)*

John Deere 5101E Ltd Diesel

Institute of Agriculture and Natural Resources
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