

# NEBRASKA TRACTOR TEST 2028

## JOHN DEERE 6230 DIESEL

### 16 SPEED

#### POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/lp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Mean Atmospheric Conditions
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>					
<b>Rated Engine Speed (PTO speed-1041 rpm)</b>					
78.10 (58.24)	2299	5.54 (20.98)	0.499 (0.304)	14.09 (2.78)	
<b>Standard Power Take-off Speed (1000 rpm)</b>					
82.60 (61.59)	2208	5.57 (21.07)	0.474 (0.288)	14.84 (2.92)	
<b>Maximum Power (1 hour)</b>					
85.45 (63.72)	1899	5.31 (20.11)	0.437 (0.266)	16.09 (3.17)	
<b>VARYING POWER AND FUEL CONSUMPTION</b>					
78.10 (58.24)	2299	5.54 (20.98)	0.499 (0.304)	14.09 (2.78)	Air temperature
68.55 (51.12)	2372	5.18 (19.62)	0.532 (0.323)	13.23 (2.61)	73°F (23°C)
51.35 (38.29)	2392	4.45 (16.86)	0.610 (0.371)	11.53 (2.27)	Relative humidity
34.95 (26.06)	2417	3.78 (14.32)	0.762 (0.463)	9.24 (1.82)	29%
17.40 (12.98)	2448	3.09 (11.70)	1.250 (0.760)	5.63 (1.11)	Barometer
1.80 (1.34)	2460	2.33 (8.83)	9.111 (5.542)	0.77 (0.15)	28.89" Hg (97.83 kPa)

Maximum Torque - 258 lb.-ft. (350 Nm) at 1599 rpm  
 Maximum Torque rise - 44.7%  
 Torque rise at 1848 engine rpm - 35%  
 Power increase at 1899 rpm - 9.4%

#### TRACTOR SOUND LEVEL WITH CAB

	Engaged dB(A)	Front Wheel Drive Disengaged dB(A)
At no load in 7th(B3) Gear	73.0	72.9
Transport in 16th(D4) gear	--	74.5
Bystander in 16th(D4) gear	--	80.0

#### TIRES AND WEIGHT

**Rear Tires**—No., size, ply & psi (kPa)  
**Front Tires**—No., size, ply & psi (kPa)  
**Height of Drawbar**  
**Static Weight with operator**—Rear  
 —Front  
 —Total

#### Tested Without Ballast

Two 460/85R34; \*\*, 12 (80)  
 Two 380/85R24; \*\*, 12 (80)  
 16.5 in (420 mm)  
 6155 lb (2792 kg)  
 3810 lb (1728 kg)  
 9965 lb (4520 kg)

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

**Dates of tests:** May 16 - 21, 2012

**Manufacturer:** John Deere Werke, Mannheim Germany

**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 15W-40 API service classification CJ-4 Transmission and hydraulic lubricant John Deere Hy-Gard II fluid Front axle lubricant John Deere Hy-Gard II fluid Total time engine was operated 7.5 hours.

**ENGINE: Make** John Deere Diesel **Type** four cylinder vertical with turbocharger and water to air intercooler **Serial No.** \*CD4045L182531\* **Crankshaft** lengthwise **Rated engine speed** 2300 **Bore and stroke** 4.19" x 5.00" (106.5 mm x 127.0 mm) **Compression ratio** 16.7 to 1 **Displacement** 276 cu in (4525 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, engine coolant heat exchanger for hydraulic and transmission oil **Fuel filter** one paper element **Fuel cooler** radiator for pump return fuel **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat and variable speed fan

**ENGINE OPERATING PARAMETERS: Fuel rate:** 36.1 - 39.0 lb/h (16.4 - 17.7 kg/h) **High idle:** 2410 - 2510 rpm **Turbo boost:** nominal 12.3-15.2 psi (85-105 kPa) as measured 13.9 psi (96 kPa)

**CHASSIS: Type** front wheel assist **Serial No.** \*1L06230XKBH700851\* **Tread width** rear 56.9" (1446 mm) to 75.4" (1916 mm) front 59.9" (1522 mm) to 79.3" (2014 mm) **Wheel base** 94.5" (2400 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (4) range operator controlled powershift **Nominal travel speeds mph (km/h)** first 1.60 (2.57) second 1.92 (3.09) third 2.30 (3.70) fourth 2.81 (4.53) fifth 3.20 (5.15) sixth 3.85 (6.20) seventh 4.61 (7.42) eighth 5.26 (8.46) ninth 5.65 (9.09) tenth 6.33 (10.19) eleventh 7.58 (12.20) twelfth 9.29 (14.95) thirteenth 10.83 (17.43) fourteenth 13.04 (20.98) fifteenth 15.62 (25.13) sixteenth 19.13 (30.78) reverse 1.67 (2.68), 2.01 (3.23), 2.40 (3.86), 2.94 (4.73), 3.34 (5.37), 4.02 (6.47), 4.82 (7.75), 5.49 (8.84), 5.90 (9.49), 6.61 (10.64), 7.92 (12.74), 9.69 (15.60), 11.31 (18.20), 13.61 (21.90), 16.30 (26.23), 19.96 (32.12)

## HYDRAULIC PERFORMANCE

CATEGORY: II

Quick Attach: none

OECD Static test

Maximum force exerted through whole range: 4450 lbs (19.8 kN)  
 pump size 21.1 GPM (79.8 l/min) 29.0 GPM (109.8 l/min)

i) Sustained pressure of the open relief valve: 2980 psi (205 bar) 2996 psi (207 bar)

ii) Pump delivery rate at minimum pressure: 23.1 GPM (87.5 l/min) 32.1 GPM (121.6 l/min)

iii) Pump delivery rate at maximum

hydraulic power: 23.3 GPM (88.1 l/min) 31.2 GPM (118.2 l/min)

Delivery pressure: 2613 psi (180 bar) 2608 psi (180 bar)

Power: 35.5 HP (26.5 kW) 47.5 HP (35.4 kW)

### THREE POINT HITCH PERFORMANCE (SAE static test)

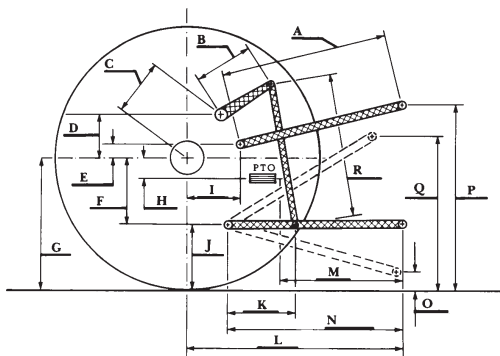
Observed maximum pressure psi. (bar)	2990 (206)
Location:	lift cylinder
Hydraulic oil temperature: °F (°C)	149 (65)
Location:	hydraulic valve
Category:	II
Quick attach:	none

System pressure - 2480 psi (171 Bar)

Hitch point distance to ground level in. (mm)	8.0 (203)	15.0 (381)	22.0 (559)	29.0 (737)	36.0 (915)
Lift force on frame lb	5622	6020	6106	5970	5356
" " " " " " (kN)	(25.0)	(26.8)	(27.2)	(26.6)	(23.8)

#### HITCH DIMENSIONS AS TESTED—NO LOAD

	OECD test		SAE test	
	inch	mm	inch	mm
A	25.8	655	24.4	620
B	12.6	320	12.6	320
C	20.0	507	20.0	507
D	23.9	475	23.9	475
E	9.7	245	9.7	245
F	8.7	220	8.7	220
G	32.3	820	32.3	820
H	4.9	125	4.9	125
I	17.6	448	17.6	448
J	23.6	600	23.6	600
K	19.8	502	19.8	502
L	42.3	1076	42.3	1076
M	21.5	546	21.5	546
N	37.2	945	37.2	945
O	7.9	200	7.9	200
P	47.6	1210	42.6	1083
Q	34.6	880	34.6	880
R	31.3	795	31.3	795



**JOHN DEERE 6230 DIESEL**

Institute of Agriculture and Natural Resources  
 University of Nebraska-Lincoln

**Clutch** multiple wet disc hydraulically operated by foot pedal  
**Brakes** wet disc hydraulically operated by two foot pedals which can be locked together  
**Steering** hydrostatic **Power take-off** 540 rpm at 2143 engine rpm or 1000 rpm at 2208 engine rpm  
**Unladen tractor mass** 9790 lb (4441 kg)

**REPAIRS AND ADJUSTMENTS:** No repairs or adjustments

**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 119°F (49°C).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **2028**, June 27, 2012.

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