January 2003

Nebraska Summary 443: John Deere 6415 Diesel 16-Speed

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SUMMARY OF OECD TEST 2127—NEBRASKA SUMMARY 443
JOHN DEERE 6415 DIESEL
16 SPEED

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-1041 rpm)					
87.5 *(65.2)*	2298	5.70 *(21.57)*	0.450 *(0.273)*	15.35 *(3.02)*	
Standard Power Take-off Speed (1000 rpm)					
90.7 *(67.6)*	2208	5.69 *(21.56)*	0.433 *(0.264)*	15.91 *(3.14)*	
Maximum Power (2 hours)					
95.6 *(71.3)*	2100	5.88 *(22.26)*	0.424 *(0.258)*	16.24 *(3.20)*	
VARYING POWER AND FUEL CONSUMPTION					
87.5 *(65.2)*	2298	5.70 *(21.57)*	0.450 *(0.273)*	15.35 *(3.02)*	Air temperature
75.9 *(56.6)*	2358	5.26 *(19.90)*	0.478 *(0.291)*	14.42 *(2.84)*	72°F *(22°C)*
57.8 *(43.1)*	2391	4.64 *(17.56)*	0.554 *(0.337)*	12.45 *(2.45)*	Relative humidity
39.0 *(29.1)*	2418	3.71 *(14.05)*	0.657 *(0.400)*	10.49 *(2.07)*	27%
19.7 *(14.7)*	2449	2.83 *(10.71)*	0.992 *(0.603)*	6.96 *(1.37)*	Barometer
-- --	2460	1.93 *(7.29)*	-- --	-- --	29.8" Hg *(101.1 kPa)*

Maximum Torque - 265 lb.-ft. *(387 Nm)* at 1501 rpm
Maximum Torque Rise - 42.8%
Torque rise at 1800 engine rpm - 34%

DRAWBAR PERFORMANCE
(Unballasted–Front Drive Engaged)
FUEL CONSUMPTION CHARACTERISTICS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp.°F *(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Power—9th (C2) Gear									
73.1 *(54.5)*	5575 *(24.80)*	4.92 *(7.92)*	2303	6.9	0.548 *(0.334)*	12.67 *(2.50)*	192 *(89)*	63 *(17)*	29.5 *(100.0)*
75% of Pull at Maximum Power—9th (C2) Gear									
58.1 *(43.3)*	4200 *(18.68)*	5.19 *(8.35)*	2377	4.9	0.606 *(0.369)*	11.47 *(2.26)*	183 *(84)*	63 *(17)*	29.5 *(100.0)*
50% of Pull at Maximum Power—9th (C2) Gear									
40.1 *(29.9)*	2820 *(12.54)*	5.34 *(8.59)*	2402	3.2	0.735 *(0.447)*	9.46 *(1.86)*	176 *(80)*	64 *(18)*	29.5 *(100.0)*
75% of Pull at Reduced Engine Speed—10th (B4) Gear									
58.1 *(43.3)*	4170 *(18.54)*	5.22 *(8.41)*	2220	4.8	0.572 *(0.348)*	12.14 *(2.39)*	192 *(89)*	63 *(17)*	29.5 *(100.0)*
50% of Pull at Reduced Engine Speed—10th (B4) Gear									
40.1 *(29.9)*	2810 *(12.50)*	5.35 *(8.62)*	2238	3.1	0.690 *(0.420)*	10.08 *(1.99)*	176 *(80)*	64 *(18)*	29.5 *(100.0)*

Location of Test: DLG Testing Station for Agricultural Machinery Max - Eyth - Weg 1, D-64823 Gros-Umstadt, Germany

Dates of Test: September 2003 to January 2004

Manufacturer: Deere & Company, Moline, Illinois, USA

FUEL and OIL: Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F *(15°/15°C)*** 0.828 **Fuel weight** 6.89 lbs/gal *(0.826 kg/l)* **Oil SAE** 15W-40 **API service classification** CF-4 **Transmission and hydraulic lubricant** John Deere Hy-Gard fluid **Front axle lubricant** SAE 80W90.

ENGINE: Make John Deere Diesel **Type** four cylinder vertical with turbocharger and intercooler **Serial No.** 807981 **Crankshaft** lengthwise **Rated engine speed** 2300 **Bore and stroke** 4.19" x 5.00" *(106.5 mm x 127.0 mm)* **Compression ratio** 16.9 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, radiator for hydraulic and transmission oil **Fuel filter** one paper element **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat and variable speed fan

CHASSIS: Type front wheel assist **Serial No.** 387593 **Tread width** rear 63.5" *(1612 mm)* to 79.2" *(2012 mm)* front 59.7" *(1516 mm)* to 79.3" *(2016 mm)* **Wheel base** 94.5" *(2400 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph *(km/h)*** first 1.22 *(1.96)* second 1.58 *(2.55)* third 2.20 *(3.54)* fourth 2.44 *(3.93)* fifth 2.80 *(4.51)* sixth 3.18 *(5.11)* seventh 4.01 *(6.46)* eighth 4.41 *(7.09)* ninth 5.22 *(8.40)* tenth 5.61 *(9.03)* eleventh 7.25 *(11.66)* twelfth 8.27 *(13.31)* thirteenth 9.23 *(14.86)* fourteenth 10.74 *(17.29)* fifteenth 14.92 *(24.01)* sixteenth 19.01 *(30.60)* reverse 1.27 *(2.05)*, 1.65 *(2.66)*, 2.29 *(3.69)*, 2.55 *(4.10)*, 2.92 *(4.70)*, 3.31 *(5.33)*, 4.19 *(6.75)*, 4.60 *(7.40)*, 5.44 *(8.76)*, 5.86 *(9.43)*, 7.56 *(12.17)*, 8.63 *(13.89)*, 9.64 *(15.51)*, 11.22 *(18.05)*, 15.57 *(25.06)*, 19.85 *(31.94)* **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** 9480 lb *(4300 kg)*

DRAWBAR PERFORMANCE
(Unballasted–Front Drive Engaged)
MAXIMUM POWER IN SELECTED GEARS

Power Hp *(kW)*	Drawbar pull lbs *(kN)*	Speed mph *(km/h)*	Crank-shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*	Temp.°F*(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
				6th (B2) Gear					
67.2 *(50.1)*	9065 *(40.33)*	2.78 *(4.47)*	2334	14.8	0.588 *(0.358)*	11.83 *(2.33)*	197 *(92)*	57 *(14)*	29.5 *(100.0)*
				7th (C1) Gear					
75.5 *(56.3)*	8840 *(39.33)*	3.20 *(5.15)*	2101	13.8	0.537 *(0.327)*	12.94 *(2.55)*	183 *(84)*	57 *(14)*	29.5 *(100.0)*
				8th (B3) Gear					
76.0 *(56.7)*	7950 *(35.36)*	3.59 *(5.78)*	2102	12.0	0.535 *(0.325)*	12.99 *(2.56)*	197 *(92)*	57 *(14)*	29.5 *(100.0)*
				9th (C2) Gear					
77.0 *(57.4)*	6585 *(29.29)*	4.39 *(7.06)*	2099	8.7	0.524 *(0.319)*	13.24 *(2.61)*	178 *(81)*	43 *(6)*	29.5 *(100.0)*
				10th (B4) Gear					
79.7 *(59.4)*	6295 *(27.99)*	4.75 *(7.64)*	2094	8.6	0.513 *(0.312)*	13.55 *(2.67)*	196 *(91)*	57 *(14)*	29.5 *(100.0)*
				11th (C3) Gear					
78.6 *(58.6)*	4665 *(20.75)*	6.32 *(10.17)*	2099	5.6	0.515 *(0.313)*	13.50 *(2.66)*	178 *(81)*	43 *(6)*	29.5 *(100.0)*
				12th (D1) Gear					
79.1 *(59.0)*	4075 *(18.12)*	7.28 *(11.72)*	2098	4.6	0.514 *(0.313)*	13.53 *(2.67)*	178 *(81)*	45 *(7)*	29.5 *(100.0)*
				13th (C4) Gear					
78.6 *(58.6)*	3615 *(16.09)*	8.15 *(13.12)*	2093	4.0	0.515 *(0.313)*	13.50 *(2.66)*	178 *(81)*	45 *(7)*	29.5 *(100.0)*
				14th (D2) Gear					
77.4 *(57.7)*	3035 *(13.50)*	9.57 *(15.40)*	2095	2.8	0.520 *(0.316)*	13.36 *(2.63)*	179 *(82)*	54 *(12)*	29.5 *(100.0)*

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. The performance results on this summary were taken from OECD tests conducted under the Code II Test Code procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **2127** Nebraska Summary 443, August 18,2004.

Leonard L. Bashford
Director

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Board of Tractor Test Engineers

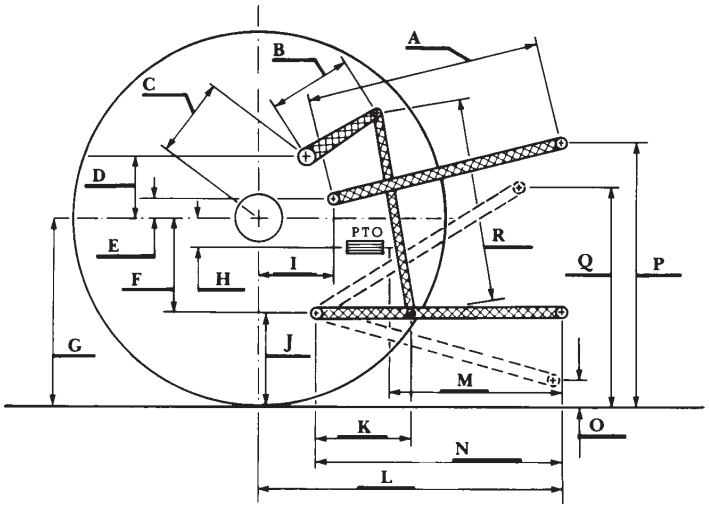
TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Engaged dB(A)	Front Wheel Drive Disengaged dB(A)
At no load in 9th(C2) Gear	70.5	70.0
Maximum Sound level	73.5	70.5
Bystander	--	--

TIRES AND WEIGHT	Tested Without Ballast
Rear Tires–No., size, ply & psi *(kPa)*	Two 18.4-38; 8; 12 *(80)*
Front Tires–No., size, ply & psi *(kPa)*	Two 13.6-24; 8; 12 *(80)*
Height of Drawbar	20.5 in *(520 mm)*
Static Weight with operator– Rear	6130 lb *(2780 kg)*
– Front	3515 lb *(1595 kg)*
– Total	9645 lb *(4375 kg)*

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: II
Quick Attach: none
Maximum Force Exerted Through Whole Range: 5675 lbs *(25.25 kN)*

i) Opening pressure of relief valve:	NA	
Sustained pressure of the open relief valve:	3050 psi *(210 bar)*	
	one outlet set	**two outlet sets combined**
ii)Pump delivery rate at minimum pressure:	17.0 GPM *(64.2 l/min)*	18.8 GPM *(71.3 l/min)*
iii)Pump delivery rate at maximum hydraulic power:	15.9 GPM *(60.3 l/min)*	18.2 GPM *(68.9 l/min)*
Delivery pressure:	2680 psi *(185 bar)*	2680 psi *(185 bar)*
Power:	24.9 HP *(18.6 kW)*	28.5 HP *(21.3 kW)*



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	*mm*
A	25.8	*655*
B	12.0	*305*
C	20.0	*508*
D	18.7	*475*
E	7.3	*185*
F	8.9	*225*
G	32.3	*820*
H	2.8	*70*
I	18.1	*460*
J	23.4	*595*
K	19.9	*505*
L	42.5	*1080*
M	21.7	*550*
N	37.2	*945*
O	7.9	*200*
P	47.4	*1205*
Q	34.6	*880*
R	32.1	*815*

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