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## Nebraska Summary 386: John Deere 6320 Powrquad Plus 16-Speed

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# SUMMARY OF OECD TEST 2008—NEBRASKA SUMMARY 386

## JOHN DEERE 6320 POWRQUAD PLUS 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
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>					
<b>Rated Engine Speed (PTO speed-1042 rpm)</b>					
83.5 (62.3)	2300	5.22 (19.78)	0.433 (0.263)	15.99 (3.15)	
<b>Standard Power Take-off Speed (1000 rpm)</b>					
85.7 (63.9)	2208	5.16 (19.54)	0.417 (0.253)	16.60 (3.27)	
<b>Maximum Power (2 hours)</b>					
88.1 (65.7)	2001	5.03 (19.06)	0.395 (0.241)	17.50 (3.45)	

#### VARYING POWER AND FUEL CONSUMPTION

83.5 (62.3)	2300	5.22 (19.78)	0.433 (0.263)	15.99 (3.15)	Air temperature
73.5 (54.8)	2386	4.97 (18.82)	0.468 (0.284)	14.78 (2.91)	72°F (22°C)
55.6 (41.5)	2408	4.17 (15.80)	0.520 (0.317)	13.33 (2.63)	Relative humidity
37.5 (28.0)	2426	3.47 (13.15)	0.644 (0.392)	10.79 (2.13)	33%
18.8 (14.0)	2444	2.71 (10.25)	0.997 (0.607)	6.94 (1.37)	Barometer
--	2468	1.88 (7.13)	--	--	29.64" Hg (100.4 kPa)

Maximum Torque - 265 lb.-ft. (359 Nm) at 1304 rpm  
 Maximum Torque Rise - 39.1%  
 Torque rise at 1800 engine rpm - 31%

#### 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)
<b>Maximum Power—10th (C2) Gear</b>									
63.8 (47.5)	3870 (17.22)	6.18 (9.95)	2297	3.5	0.556 (0.338)	12.59 (2.48)	145 (63)	45 (7)	29.7 (100.5)
<b>75% of Pull at Maximum Power—10th (C2) Gear</b>									
49.9 (37.2)	2875 (12.79)	6.51 (10.48)	2398	2.5	0.650 (0.396)	10.75 (2.12)	151 (66)	45 (7)	29.7 (100.5)
<b>50% of Pull at Maximum Power—10th (C2) Gear</b>									
33.8 (25.2)	1910 (8.50)	6.63 (10.67)	2418	1.6	0.807 (0.491)	8.67 (1.71)	147 (64)	45 (7)	29.7 (100.5)
<b>75% of Pull at Reduced Engine Speed—11th (C3) Gear</b>									
50.1 (37.4)	2880 (12.80)	6.53 (10.51)	2005	2.8	0.560 (0.341)	12.49 (2.46)	144 (62)	46 (8)	29.6 (100.3)
<b>50% of Pull at Reduced Engine Speed—11th (C3) Gear</b>									
34.2 (25.5)	1920 (8.55)	6.68 (10.75)	2034	1.9	0.675 (0.411)	10.36 (2.04)	142 (61)	46 (8)	29.6 (100.3)

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

**Dates of Test:** January - March, 2002

**Manufacturer:** Deere & Company, Moline, Illinois, USA

**FUEL and OIL:** Fuel No. 2 Diesel Specific gravity converted to 60°/60° F (15°/15°C) 0.831 Fuel weight 6.92 lbs/gal (0.829 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. 663513 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. 322373 Tread width rear 63.1" (1604 mm) to 78.9" (2004 mm) front 59.7" (1516 mm) to 84.1" (2136 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 1.58 (2.55) second 1.91 (3.07) third 2.29 (3.68) fourth 2.80 (4.51) fifth 3.18 (5.12) sixth 3.83 (6.16) seventh 4.58 (7.38) eighth 5.23 (8.41) ninth 5.61 (9.03) tenth 6.29 (10.13) eleventh 7.54 (12.13) twelfth 9.23 (14.86) thirteenth 10.77 (17.33) fourteenth 12.96 (20.86) fifteenth 15.52 (24.98) sixteenth 19.01 (30.60) reverse 1.65 (2.66), 1.99 (3.21), 2.39 (3.84), 2.92 (4.70), 3.32 (5.34), 4.00 (6.43), 4.78 (7.70), 5.46 (8.78), 5.86 (9.43), 6.57 (10.57), 7.87 (12.66), 9.64 (15.51), 11.24 (18.09), 13.53 (21.77), 16.20 (26.07), 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 10030 lb (4550 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)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)	
5th (B1) Gear									
63.6 (47.4)	9450 (42.04)	2.52 (4.06)	2104	15.0	0.556 (0.338)	12.59 (2.48)	138 (59)	43 (6)	29.6 (100.3)
6th (B2) Gear									
67.2 (50.1)	8480 (37.72)	2.97 (4.78)	2000	12.6	0.520 (0.317)	13.44 (2.65)	144 (62)	43 (6)	29.6 (100.3)
7th (B3) Gear									
69.5 (51.9)	7135 (31.73)	3.65 (5.88)	2001	9.8	0.506 (0.308)	13.81 (2.72)	135 (57)	39 (4)	29.6 (100.3)
8th (C1) Gear									
69.7 (52.0)	6105 (27.15)	4.28 (6.88)	2002	7.7	0.501 (0.305)	13.94 (2.75)	140 (60)	43 (6)	29.6 (100.3)
9th (B4) Gear									
69.2 (51.6)	5615 (24.98)	4.62 (7.43)	1996	6.8	0.511 (0.311)	13.68 (2.70)	137 (58)	39 (4)	29.6 (100.3)
10th (C2) Gear									
72.5 (54.1)	5160 (22.96)	5.27 (8.47)	2001	5.2	0.483 (0.294)	14.47 (2.85)	140 (60)	45 (7)	29.6 (100.3)
11th (C3) Gear									
71.3 (53.2)	4185 (18.62)	6.39 (10.29)	2001	4.0	0.490 (0.298)	14.26 (2.81)	142 (61)	45 (7)	29.6 (100.3)
12th (C4) Gear									
69.3 (51.7)	3280 (14.58)	7.93 (12.77)	2002	3.2	0.506 (0.308)	13.81 (2.72)	151 (66)	46 (8)	29.7 (100.5)

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

**REMARKS:** All test results were determined from observed data obtained in accordance with official OECD test procedures. This tractor did not meet the manufacturer's claim of 5% improved economy when compared to the John Deere 6310 Diesel. 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. **2008**, Nebraska Summary 386, January 23, 2003.

Leonard L. Bashford  
 Director

M.F. Kocher  
 V.I. Adamchuk  
 W.P. Campbell  
 Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
At no load in 7th(B3) Gear	73.0	72.5
Maximum Sound level	75.0	74.5
Bystander	--	--

**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 18.4-38; 8; 12 (80)  
 Two 16.9-24; 6; 12 (80)  
 20.9 in (530 mm)  
 7210 lb (2830 kg)  
 4065 lb (1795 kg)  
 10195 lb (4625 kg)

### THREE POINT HITCH PERFORMANCE (OECD Static Test)

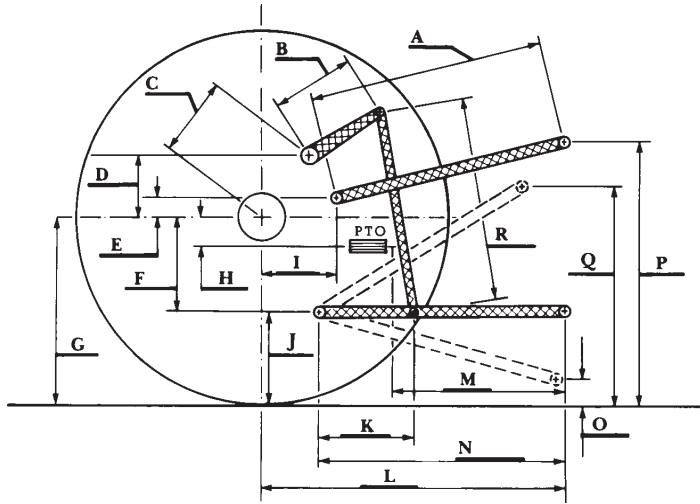
CATEGORY: II

Quick Attach: none

Maximum Force Exerted Through Whole Range: 5060 lbs (22.50 kN)

- i) Opening pressure of relief valve: NA
- Sustained pressure of the open relief valve: 2975 psi (205 bar)
- ii) Pump delivery rate at minimum pressure: 30.9 GPM (116.9 l/min)
- iii) Pump delivery rate at maximum
  - hydraulic power: 27.1 GPM (102.7 l/min)
  - Delivery pressure: 2685 psi (185 bar)
  - Power: 42.5 HP (31.7 kW)

### HITCH DIMENSIONS AS TESTED—NO LOAD



	inch	mm
A	26.0	660
B	12.0	305
C	19.9	505
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	19.8	505
L	42.5	1080
M	21.7	550
N	37.2	945
O	7.9	200
P	47.4	1205
Q	33.5	850
R	32.1	815