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January 2002

## Nebraska Summary 385: John Deere 6220 Powrquad Plus Diesel 24-Speed

Nebraska Tractor Test Lab

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# SUMMARY OF OECD TEST 2027—NEBRASKA SUMMARY 385

## JOHN DEERE 6220 POWRQUAD PLUS DIESEL

### 24 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>					
75.8 (56.5)	2300	4.85 (18.35)	0.443 (0.269)	15.63 (3.08)	
<b>Standard Power Take-off Speed (1000 rpm)</b>					
76.3 (56.9)	2208	4.72 (17.86)	0.428 (0.260)	16.17 (3.19)	
<b>Maximum Power (2 hours)</b>					
79.1 (59.0)	2001	4.63 (17.54)	0.406 (0.247)	17.06 (3.36)	

#### VARYING POWER AND FUEL CONSUMPTION

75.8 (56.5)	2300	4.85 (18.35)	0.443 (0.269)	15.63 (3.08)	Air temperature
67.9 (50.6)	2422	4.72 (17.88)	0.482 (0.293)	14.37 (2.83)	73°F (23°C)
51.2 (38.2)	2437	4.02 (15.20)	0.543 (0.330)	12.74 (2.51)	Relative humidity
34.5 (25.7)	2453	3.35 (12.67)	0.672 (0.409)	10.29 (2.03)	27%
17.3 (12.9)	2470	2.55 (9.65)	1.021 (0.621)	6.78 (1.34)	Barometer
--	2487	1.83 (6.91)	--	--	29.47" Hg (99.8 kPa)

Maximum Torque - 252 lb.-ft. (342 Nm) at 1198 rpm  
 Maximum Torque Rise - 45.5%  
 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—11th (C3) Gear</b>									
59.5 (44.4)	4620 (20.55)	4.83 (7.78)	2296	6.9	0.565 (0.344)	12.38 (2.44)	135 (57)	50 (10)	29.4 (99.5)
<b>75% of Pull at Maximum Power—11th (C3) Gear</b>									
47.8 (35.7)	3460 (15.40)	5.18 (8.34)	2407	4.9	0.639 (0.389)	10.94 (2.16)	136 (58)	50 (10)	29.4 (99.5)
<b>50% of Pull at Maximum Power—11th (C3) Gear</b>									
32.8 (24.5)	2310 (10.28)	5.33 (8.57)	2424	3.0	0.781 (0.475)	8.95 (1.76)	138 (59)	50 (10)	29.4 (99.5)
<b>75% of Pull at Reduced Engine Speed—12th (D1) Gear</b>									
47.7 (35.6)	3475 (15.45)	5.15 (8.29)	2101	5.0	0.569 (0.346)	12.29 (2.42)	136 (58)	50 (10)	29.4 (99.5)
<b>50% of Pull at Reduced Engine Speed—12th (D1) Gear</b>									
32.7 (24.4)	2315 (10.31)	5.30 (8.53)	2125	3.3	0.686 (0.417)	10.20 (2.01)	136 (58)	50 (10)	29.4 (99.5)

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

**Dates of Test:** February - April, 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 **Serial No.** 665203 **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.** 322490 **Tread width** rear 63.6" (1616 mm) to 75.3" (1912 mm) front 59.8" (1520 mm) to 79.1" (2010 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 0.89 (1.43) second 1.07 (1.72) third 1.28 (2.06) fourth 1.57 (2.52) fifth 2.17 (3.49) sixth 2.61 (4.20) seventh 3.13 (5.03) eighth 3.54 (5.69) ninth 3.83 (6.16) tenth 4.26 (6.85) eleventh 5.10 (8.20) twelfth 5.80 (9.34) thirteenth 6.24 (10.05) fourteenth 6.98 (11.24) fifteenth 8.36 (13.46) sixteenth 9.43 (15.18) seventeenth 10.25 (16.49) eighteenth 11.35 (18.27) nineteenth 12.73 (20.48) twentieth 13.59 (21.87) twenty-first 15.33 (24.66) twenty-second 16.65 (26.80) twenty-third 18.36 (29.54) twenty-fourth 22.48 (36.17) reverse 0.93 (1.49), 1.12 (1.80), 1.34 (2.15), 1.64 (2.64), 2.26 (3.64), 2.73 (4.39), 3.26 (5.25), 3.69 (5.94), 4.00 (6.43), 4.44 (7.15), 5.32 (8.56), 6.06 (9.75), 6.52 (10.49), 7.30 (11.74), 8.73 (14.05), 9.84 (15.84), 10.69 (17.21), 11.85 (19.07), 14.19 (22.84), 13.28 (21.38), 15.99 (25.74), 17.39 (27.98), 19.15 (30.82), 23.46 (37.76)

**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)	Fuel Consumption Hp.hr/gal (kW.h/l)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
8th (C1) Gear									
59.4 (44.3)	8115 (36.10)	2.75 (4.42)	2047	15.0	0.545 (0.331)	12.85 (2.53)	136 (58)	43 (6)	29.4 (99.5)
9th (B4) Gear									
59.4 (44.3)	7540 (33.54)	2.95 (4.75)	1999	13.5	0.545 (0.331)	12.85 (2.53)	135 (57)	46 (8)	29.4 (99.5)
10th (C2) Gear									
57.8 (43.1)	6500 (28.91)	3.33 (5.37)	2001	11.9	0.545 (0.332)	12.83 (2.53)	138 (59)	68 (20)	29.6 (100.2)
11th (C3) Gear									
61.2 (45.6)	5555 (24.70)	4.13 (6.65)	2006	9.3	0.526 (0.320)	13.30 (2.62)	140 (60)	63 (17)	29.6 (100.2)
12th (D1) Gear									
61.5 (45.9)	4820 (21.44)	4.79 (7.70)	1998	7.7	0.519 (0.316)	13.48 (2.66)	138 (59)	59 (15)	29.6 (100.2)
13th (C4) Gear									
59.6 (44.4)	4305 (19.15)	5.19 (8.36)	1997	6.6	0.537 (0.326)	13.05 (2.57)	138 (59)	59 (15)	29.6 (100.2)
14th (D2) Gear									
62.2 (46.4)	3965 (17.64)	5.88 (9.47)	2004	5.8	0.517 (0.314)	13.55 (2.67)	136 (58)	63 (17)	29.6 (100.2)
15th (D3) Gear									
61.2 (45.6)	3235 (14.39)	7.09 (11.41)	1995	4.8	0.522 (0.318)	13.39 (2.64)	136 (58)	65 (18)	29.7 (100.2)
16th (E1) Gear									
59.1 (44.1)	2755 (12.25)	8.05 (12.96)	1997	4.2	0.542 (0.329)	12.91 (2.54)	138 (59)	66 (19)	29.7 (100.2)

**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** 9580 lb (4345 kg)

**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 3 point lift claim of 4745 lb (2152 kg). 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. **2027**, Nebraska Summary 385, 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 11th(C3) Gear	71.0	71.0
Maximum Sound level	72.5	72.0
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 16.9-30; 6; 17 (120)  
 Two 12.4-24; 6; 17 (120)  
 14.5 in (370 mm)  
 5940 lb (2695 kg)  
 3805 lb (1725 kg)  
 9745 lb (4420 kg)

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

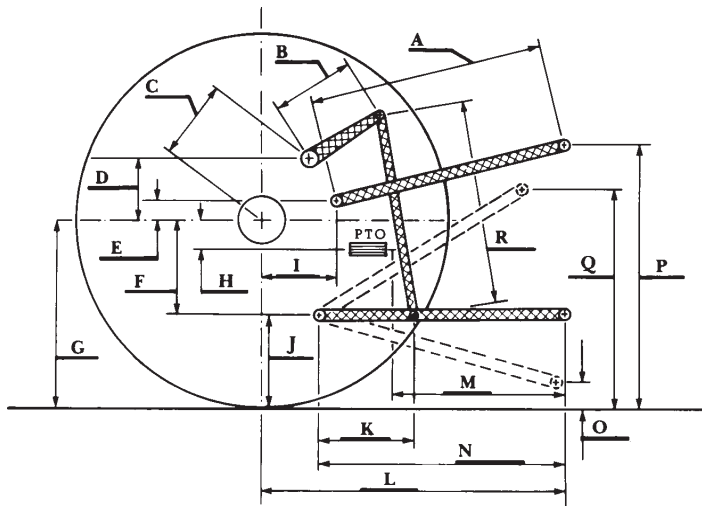
CATEGORY: II

Quick Attach: none

Maximum Force Exerted Through Whole Range: 4045 lbs (18.00 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: 31.1 GPM (117.7 l/min)
- iii) Pump delivery rate at maximum
  - hydraulic power: 26.7 GPM (101.0 l/min)
  - Delivery pressure: 2755 psi (190 bar)
  - Power: 42.9 HP (32.0 kW)

### HITCH DIMENSIONS AS TESTED—NO LOAD



	inch	mm
A	25.6	650
B	12.0	305
C	20.0	508
D	18.7	475
E	6.9	175
F	8.9	225
G	27.4	695
H	3.1	80
I	18.1	460
J	18.5	470
K	19.9	505
L	42.5	1080
M	21.7	550
N	37.2	945
O	7.9	200
P	42.5	1080
Q	33.3	845
R	29.3	745