

SUMMARY OF OECD TEST 2416—NEBRASKA SUMMARY 628

JOHN DEERE 6230 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 |
|---|--------------------------------|-----------------|-----------------------|-----------------------|--------------------------------|
| MAXIMUM POWER AND FUEL CONSUMPTION | | | | | |
| Rated Engine Speed (PTO speed-1042 rpm) | | | | | |
| 76.6 (57.1) | 2300 | 4.94 (18.69) | 0.451 (0.274) | 15.50 (3.05) | |
| Standard Power Take-off Speed (1000 rpm) | | | | | |
| 83.5 (62.3) | 2208 | 5.10 (19.29) | 0.427 (0.259) | 16.39 (3.23) | |
| Maximum Power (1 hour) | | | | | |
| 90.9 (67.8) | 1900 | 5.40 (20.45) | 0.415 (0.253) | 16.84 (3.32) | |

| VARYING POWER AND FUEL CONSUMPTION | | | | | |
|------------------------------------|------|-----------------|------------------|-----------------|---------------------|
| 76.6 (57.1) | 2300 | 4.94 (18.69) | 0.451 (0.274) | 15.50 (3.05) | Air temperature |
| 66.6 (49.7) | 2358 | 4.54 (17.20) | 0.477 (0.290) | 14.66 (2.89) | 64°F (18°C) |
| 51.0 (38.0) | 2398 | 3.96 (14.98) | 0.542 (0.330) | 12.89 (2.54) | Relative humidity |
| 34.3 (25.6) | 2431 | 3.35 (12.69) | 0.682 (0.415) | 10.25 (2.02) | 38% |
| 17.4 (13.0) | 2458 | 2.77 (10.47) | 1.109 (0.675) | 6.30 (1.24) | Barometer |
| -- | 2461 | 1.99 (7.55) | -- | -- | 29.4" Hg (99.6 kPa) |

Maximum Torque - 252 lb.-ft. (367 Nm) at 1500 rpm
 Maximum Torque rise - 54.8%
 Torque rise at 1800 engine rpm - 48%

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—7th (B3) Gear | | | | | | | | | |
| 67.0 (50.0) | 5525 (24.56) | 4.55 (7.32) | 2301 | 4.3 | 0.501 (0.305) | 13.96 (2.75) | 176 (80) | 61 (16) | 29.9 (101.1) |
| 75% of Pull at Maximum Power—7th (B3) Gear | | | | | | | | | |
| 52.1 (38.8) | 4120 (18.33) | 4.74 (7.63) | 2377 | 3.4 | 0.572 (0.348) | 12.23 (2.41) | 174 (79) | 61 (16) | 29.9 (101.2) |
| 50% of Pull at Maximum Power—7th (B3) Gear | | | | | | | | | |
| 35.0 (26.1) | 2710 (12.04) | 4.84 (7.79) | 2408 | 2.4 | 0.699 (0.425) | 10.00 (1.97) | 171 (77) | 61 (16) | 29.9 (101.1) |
| 75% of Pull at Reduced Engine Speed—8th (C1) Gear | | | | | | | | | |
| 52.2 (38.9) | 4125 (18.34) | 4.74 (7.63) | 2083 | 3.5 | 0.534 (0.325) | 13.10 (2.58) | 174 (79) | 63 (17) | 29.9 (101.1) |
| 50% of Pull at Reduced Engine Speed—8th (C1) Gear | | | | | | | | | |
| 35.1 (26.2) | 2730 (12.14) | 4.82 (7.76) | 2102 | 2.5 | 0.642 (0.391) | 10.89 (2.15) | 171 (77) | 61 (16) | 29.9 (101.1) |

Location of tests: DLG Test Centre, Technology and Farm inputs, Max-Eyth-Weg 1, D-64823 Gross-Umstadt, Germany

Dates of tests: March - June, 2007

Manufacturer: Deere & Company, Moline, Illinois, USA

FUEL and OIL: Fuel No. 2 Diesel **Specific gravity converted to 60°/60° F (15°/15°C)** 0.840 **Fuel weight** 6.99 lbs/gal (0.838 kg/l) **Oil SAE 10W-40 API service classification CF-4 Transmission and hydraulic lubricant** John Deere Hy-Gard II fluid **Front axle lubricant** SAE 80W90.

ENGINE: Make John Deere Diesel **Type** four cylinder vertical with turbocharger and intercooler **Serial No.** L006080 **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, 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.** 518990 **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), 19.97 (32.13) **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** 10515 lb (4770 kg)

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

| Power Hp (kW) | Drawbar pull lbs (kN) | Speed mph (km/h) | Crankshaft speed rpm | Slip % | Fuel Consumption lb/hp.hr (kg/kW.h) | Consumption Hp.hr/gal (kW.h/l) | Temp.°F(°C) cool- ing med | Air dry bulb | Barom. inch Hg (kPa) |
|------------------|-----------------------------|---------------------|-------------------------|--------|---|--------------------------------------|------------------------------------|--------------------|-------------------------------|
| 70.5 (52.6) | 10790 (47.99) | 2.45 (3.95) | 2012 | 15.0 | 0.524 (0.319) | 13.35 (2.63) | 174 (79) | 61 (16) | 30.0 (101.6) |
| 5th (B1) Gear | | | | | | | | | |
| 76.8 (57.3) | 9705 (43.16) | 2.97 (4.78) | 1901 | 9.6 | 0.494 (0.300) | 14.16 (2.79) | 181 (83) | 61 (16) | 30.0 (101.6) |
| 6th (B2) Gear | | | | | | | | | |
| 79.3 (59.1) | 8120 (36.13) | 3.66 (5.89) | 1900 | 7.0 | 0.475 (0.289) | 14.72 (2.90) | 183 (84) | 61 (16) | 30.0 (101.6) |
| 7th (B3) Gear | | | | | | | | | |
| 78.9 (58.8) | 6995 (31.11) | 4.23 (6.81) | 1900 | 5.9 | 0.479 (0.291) | 14.59 (2.87) | 180 (82) | 61 (16) | 29.9 (101.4) |
| 8th (C1) Gear | | | | | | | | | |
| 78.6 (58.6) | 6455 (28.71) | 4.57 (7.35) | 1900 | 5.2 | 0.480 (0.292) | 14.57 (2.87) | 181 (83) | 61 (16) | 29.9 (101.4) |
| 9th (B4) Gear | | | | | | | | | |
| 80.2 (59.8) | 5840 (25.97) | 5.15 (8.29) | 1902 | 4.3 | 0.471 (0.286) | 14.85 (2.92) | 180 (82) | 48 (9) | 30.0 (101.5) |
| 10th (C2) Gear | | | | | | | | | |
| 80.9 (60.3) | 4880 (21.71) | 6.21 (9.99) | 1900 | 3.8 | 0.467 (0.284) | 14.97 (2.95) | 180 (82) | 53 (12) | 29.9 (101.3) |
| 11th (C3) Gear | | | | | | | | | |
| 78.3 (58.4) | 3835 (17.06) | 7.66 (12.33) | 1901 | 3.1 | 0.482 (0.293) | 14.52 (2.86) | 180 (82) | 53 (12) | 29.9 (101.2) |
| 12th (C4) Gear | | | | | | | | | |

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 71.0 dB(A) cab sound level. 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. **2416**, Nebraska Summary 628, February 15, 2009.

Roger M. Hoy
Director

M.F. Kocher
V.I. Adamchuk
J.A. Smith
Board of Tractor Test Engineers

| TRACTOR SOUND LEVEL WITH CAB (IVT transmission) | Front Wheel Drive | |
|--|-------------------|---------------------|
| | Engaged dB(A) | Disengaged dB(A) |
| At no load at 4.6 mph (7.5 km/h) (engine 1200 rpm) | 67.9 | 67.7 |
| At no load at 4.6 mph (7.5 km/h) (engine 2460 rpm) | 72.0 | 71.7 |
| Transport | -- | 75.7 |
| Bystander | -- | 84.4 |

| TRACTOR SOUND LEVEL WITH CAB (PowrQuad transmission) | Front Wheel Drive | |
|--|-------------------|---------------------|
| | Engaged dB(A) | Disengaged dB(A) |
| At no load in 7th (B3) Gear | 71.0 | 71.4 |
| Maximum Sound level | 73.6 | 71.6 |
| 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 460/85R38; **,12 (80)
 Two 340/85R28; **,12 (80)
 20.5 in (520 mm)
 6580 lb (2985 kg)
 4100 lb (1860 kg)
 10680 lb (4845 kg)

This vehicle is equipped with an electronically controlled engine Power management system that monitors and boosts engine power output in certain circumstances. This is achieved by electronically changing the characteristics of the engine power-speed curve. The engine Power management function ("boosted" power level) becomes active in the higher transmission gears for road transport applications. The system is also activated when power transfer through the PTO exceeds a preset level (and forward speed exceeds 0.5 km/h), for mobile PTO driven implement applications. An override system is provided to enable PTO operations at the "boosted" power level while the vehicle is stationary for test purposes. The results of of this PTO output test are presented below.

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—1042 rpm) | | | | | |
| 89.7 (66.9) | 2300 | 5.53 (20.93) | 0.431 (0.262) | 16.23 (3.20) | |
| Standard Power Take-off Speed - (1000 rpm) | | | | | |
| 93.5 (69.7) | 2208 | 5.55 (21.01) | 0.415 (0.253) | 16.84 (3.32) | |
| Maximum Power (1 hour) | | | | | |
| 95.9 (71.5) | 2100 | 5.61 (21.24) | 0.409 (0.249) | 17.10 (3.37) | |

VARYING POWER AND FUEL CONSUMPTION

| | | | | | |
|----------------|------|-----------------|------------------|-----------------|--------------------|
| 89.7 (66.9) | 2300 | 5.53 (20.93) | 0.431 (0.262) | 16.23 (3.20) | Air temperature |
| 78.6 (58.6) | 2371 | 5.10 (19.29) | 0.453 (0.276) | 15.42 (3.04) | 64°F (18°C) |
| 59.6 (44.4) | 2398 | 4.35 (16.47) | 0.511 (0.311) | 13.69 (2.70) | Relative humidity |
| 40.4 (30.1) | 2433 | 3.72 (14.10) | 0.644 (0.392) | 10.86 (2.14) | 38% |
| 20.5 (15.3) | 2458 | 2.73 (10.33) | 0.929 (0.565) | 7.53 (1.48) | Barometer |
| -- | 2460 | 2.04 (7.72) | -- | -- | 29.4"Hg (99.6 kPa) |

Maximum Torque 269 lb.-ft. (365 Nm) at 1500 rpm
 Maximum Torque Rise - 31.3%
 Torque rise at 1800 rpm - 25%

HYDRAULIC PERFORMANCE

CATEGORY: II

Quick Attach: none

OECD Static test

Maximum force exerted through whole range:
 pump size 4450 lbs (19.8 kN)
 17.5 GPM (66.3 l/min) 29.0 GPM (110.0 l/min)

i) Sustained pressure of the open relief valve: 3005 psi (207 bar) 3105 psi (214 bar)

ii) Pump delivery rate at minimum pressure: 18.9 GPM (71.7 l/min) 33.0 GPM (124.8 l/min)

iii) Pump delivery rate at maximum

hydraulic power: 18.3 GPM (69.2 l/min) 30.4 GPM (115.2 l/min)

Delivery pressure: 2560 psi (176 bar) 2555 psi (176 bar)

Power: 27.3 HP (20.4 kW) 45.2 HP (33.7 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) |

OECD test SAE test

| | 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 |

