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## Test 1871: John Deere 5203 Diesel 9-Speed

Nebraska Tractor Test Lab

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# NEBRASKA TRACTOR TEST 1871

## JOHN DEERE 5203 DIESEL

### 9 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
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#### MAXIMUM POWER AND FUEL CONSUMPTION

Rated Engine Speed—(PTO speed—545 rpm)					
48.36 (36.06)	2399	3.27 (12.39)	0.473 (0.288)	14.77 (2.91)	
Maximum Power (1 hour)					
48.77 (36.37)	2200	3.12 (11.82)	0.448 (0.272)	15.61 (3.08)	

#### VARYING POWER AND FUEL CONSUMPTION

48.36 (36.06)	2399	3.27 (12.39)	0.473 (0.288)	14.77 (2.91)	Air temperature
43.22 (32.23)	2513	3.16 (11.97)	0.511 (0.311)	13.67 (2.69)	75°F (24°C)
32.74 (24.41)	2545	2.65 (10.02)	0.565 (0.344)	12.37 (2.44)	Relative humidity
21.97 (16.38)	2576	2.05 (7.74)	0.651 (0.396)	10.74 (2.12)	21%
11.27 (8.41)	2607	1.39 (5.25)	0.861 (0.523)	8.12 (1.60)	Barometer
0.57 (0.42)	2623	0.92 (3.47)	11.280 (6.861)	0.62 (0.12)	28.48"Hg (96.44 kPa)

Maximum Torque 136 lb.-ft. (184 Nm) at 1401 rpm

Maximum Torque Rise - 28.5%

Torque rise at 1901 rpm - 15%

#### TRACTOR SOUND LEVEL WITHOUT CAB

	dB(A)
At no load in 5th(B2) gear	91.0
Transport speed - no load - 9th(C3) gear	92.0
Bystander in 9th(C3) gear	81.0

#### 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 14.9-28; 8; 12 (85)  
Two 7.50-16; 6; 28 (195)  
16.0 in (405 mm)  
3125 lb (1418 kg)  
1800 lb (816 kg)  
4925 lb (2234 kg)

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

**Dates of tests:** March 10 - 30, 2006

**Manufacturer:** John Deere Commercial Products Inc., 700 Horizon South Parkway, Grovetown Ga. USA, 30813

**FUEL, OIL and TIME:** Fuel No. 2 Diesel Specific gravity converted to 60°/60° F (15°/15°C) 0.8395 Fuel weight 6.990 lbs/gal (0.838 kg/l) Oil SAE 15W40 API service classification CG-4 Transmission and hydraulic lubricant John Deere Hy-Gard Fluid Total time engine was operated 7.0 hours

**ENGINE:** Make John Deere Diesel Type three cylinder vertical with turbocharger Serial No. \*PY3029T106478\* Crankshaft lengthwise Rated engine speed 2400 Bore and stroke 4.19" x 4.33" (106.4 mm x 110.0 mm) Compression ratio 17.8 to 1 Displacement 179 cu in (2934 ml) Starting system 12 volt Lubrication pressure Air cleaner one paper element and one polyester felt element Oil filter one full flow cartridge Fuel filter one paper element Muffler underhood Exhaust vertical Cooling medium temperature control one thermostat

**ENGINE OPERATING PARAMETERS:** Fuel rate: 21.9 - 23.9 lb/h (9.9 - 10.8 kg/h) High idle: 2575 - 2650 rpm Turbo boost: nominal 10.1 - 13.1 psi (70 - 90 kPa) as measured 11.8 psi (81 kPa)

**CHASSIS:** Type standard Serial No. \*PY5203U005206\* Tread width rear 55.7" (1415 mm) to 71.5" (1815 mm) front 56.3" (1430 mm) to 80.7" (2050 mm) Wheelbase 80.3" (2040 mm) Hydraulic control system direct engine drive Transmission selective gear fixed ratio Nominal travel speeds mph (km/h) first 1.33 (2.13) second 1.91 (3.08) third 2.88 (4.64) fourth 3.72 (5.99) fifth 5.36 (8.63) sixth 8.07 (12.98) seventh 8.61 (13.85) eighth 12.41 (19.97) ninth 18.64 (30.00) reverse 2.23 (3.59), 6.25 (10.05), 14.45 (23.26) Clutch single dry disc operated by foot pedal Brakes single wet disc mechanically operated by two foot pedals which can be locked together Steering hydrostatic Power take-off 540 rpm at 2376 engine rpm Unladen tractor mass 4750 lb (2155 kg)

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

CATEGORY: II

Quick Attach: None

Maximum force exerted through whole range: 3591 lbs (16.0 kN)

i) Opening pressure of relief valve: NA

Sustained pressure of the open relief valve: 2785 psi (192 bar)

ii) Pump delivery rate at minimum pressure and rated engine speed: 12.4 GPM (46.9 l/min)

iii) Pump delivery rate at maximum

hydraulic power: 12.3 GPM (46.6 l/min)

Delivery pressure: 2476 psi (171 bar)

Power: 17.8 HP (13.2 kW)

### THREE POINT HITCH PERFORMANCE

Observed maximum pressure psi. (bar) 2796 (193)

Location: remote outlet

Hydraulic oil temperature: °F (°C) 185 (85)

Location: hydraulic sump

Category: II

Quick attach: none

#### SAE Static Test—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 (914)
Lift force on frame lb	6633	5486	5067	4734	3978
" " " " " (kN)	(29.5)	(24.4)	(22.5)	(21.1)	(17.7)

**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 122°F (50°C).

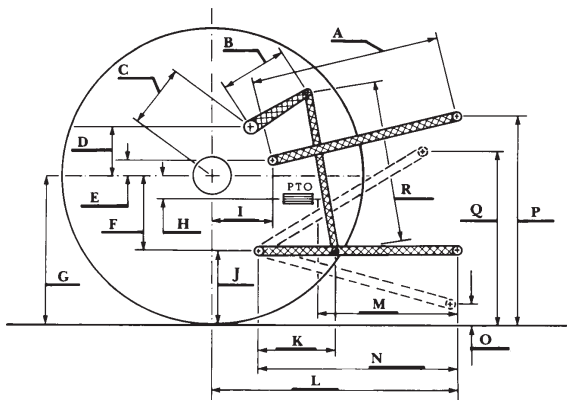
We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 1871, May 22, 2006

Leonard L. Bashford  
Director

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

	SAE Test		OECD Test	
	inch	mm	inch	mm
A	23.3	590	23.5	597
B	11.0	280	11.0	280
C	13.7	347	13.7	347
D	11.8	300	11.8	300
E	13.2	335	13.2	335
F	6.9	175	6.9	175
G	26.4	670	26.4	670
H	0.4	10	0.4	10
I	15.7	397	15.7	397
J	19.5	495	19.5	495
K	16.1	410	16.1	410
L	38.6	980	38.6	980
M	21.7	550	21.7	550
N	32.6	830	32.6	830
O	8.0	203	8.0	203
P	38.6	980	43.5	1105
Q	32.5	825	32.5	825
R	21.2	540	21.2	540

#### HITCH DIMENSIONS AS TESTED - NO LOAD



John Deere 5203 Diesel