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Test 1872: John Deere 5303 Diesel 9-Speed

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1872

JOHN DEERE 5303 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
MAXIMUM POWER AND FUEL CONSUMPTION					
55.98 (41.74)	2400	3.57 (13.50)	0.445 (0.271)	15.69 (3.09)	

56.42 (42.07)	2151	3.42 (12.95)	0.424 (0.258)	16.49 (3.25)	
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VARYING POWER AND FUEL CONSUMPTION

55.98 (41.74)	2400	3.57 (13.50)	0.445 (0.271)	15.69 (3.09)	Air temperature
49.56 (36.96)	2507	3.35 (12.67)	0.472 (0.287)	14.81 (2.92)	77°F (25°C)
38.03 (28.36)	2549	2.86 (10.83)	0.526 (0.320)	13.29 (2.62)	Relative humidity
25.66 (19.14)	2578	2.23 (8.45)	0.608 (0.370)	11.50 (2.27)	15%
12.96 (9.66)	2611	1.43 (5.42)	0.772 (0.469)	9.06 (1.78)	Barometer
0.57 (0.42)	2628	0.96 (3.63)	11.789 (7.171)	0.59 (0.12)	28.71"Hg (98.22 kPa)

Maximum Torque 164 lb.-ft. (223 Nm) at 1402 rpm
Maximum Torque Rise - 34.1%
Torque rise at 1900 rpm - 21%

TRACTOR SOUND LEVEL WITHOUT CAB

	dB(A)
At no load in 5th(B2) gear	92.0
Transport speed - no load - 9th(C3) gear	93.3
Bystander in 9th(C3) gear	82.6

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 16.9-28; 8; 12 (85)
Two 7.50-16; 6; 28 (195)
17.5 in (445 mm)
3225 lb (1463 kg)
1800 lb (816 kg)
5025 lb (2279 kg)

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

Dates of tests: March 15 - 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 9.0 hours

ENGINE: Make John Deere Diesel Type three cylinder vertical with turbocharger Serial No. *PY3029T105719* 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: 23.5 - 25.9 lb/h (10.7 - 11.7 kg/h) High idle: 2575 - 2650 rpm Turbo boost: nominal 10.9 - 13.8 psi (75 - 95 kPa) as measured 12.6 psi (87 kPa)

CHASSIS: Type standard Serial No. *PY5303U005246* 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 1.39 (2.23) second 2.01 (3.23) third 3.02 (4.85) fourth 3.89 (6.26) fifth 5.62 (9.05) sixth 8.46 (13.62) seventh 9.01 (14.50) eighth 13.03 (20.98) ninth 19.62 (31.57) reverse 2.33 (3.75), 6.55 (10.54), 15.13 (24.35) 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 4900 lb (2223 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: 2796 psi (193 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: 11.4 GPM (43.2 l/min)

Delivery pressure: 2444 psi (169 bar)

Power: 16.3 HP (12.1 kW)

THREE POINT HITCH PERFORMANCE

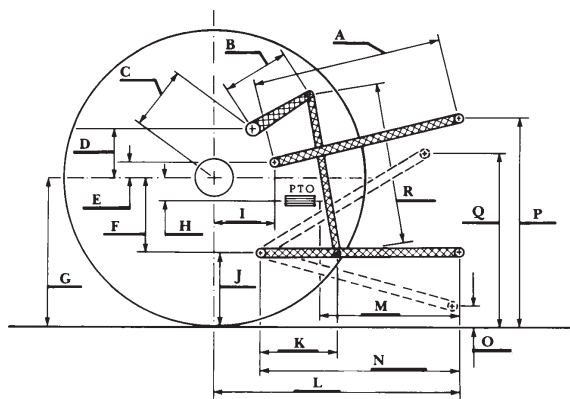
Observed maximum pressure psi. (bar) 2796 (193)
 Location: remote outlet
 Hydraulic oil temperature: °F (°C) 185 (85)
 Location: hydraulic sump
 Category: II
 Quick attach: none

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)

	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



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 125°F (52°C).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 1872, May, 22, 2006.

Leonard L. Bashford
 Director

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



John Deere 5303 Diesel