January 2005

Test 1869: John Deere 5525 Diesel 12-Speed

Tractor Museum
University of Nebraska-Lincoln, TractorMuseumArchives@unl.edu

NEBRASKA TRACTOR TEST 1869
JOHN DEERE 5525 DIESEL
12 SPEED

Location of tests: Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln Nebraska 68583-0832
Dates of tests: November 15-23, 2005.

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

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—537 rpm)					
76.01 *(56.68)*	2401	5.38 *(20.36)*	0.499 *(0.304)*	14.13 *(2.78)*	
Maximum Power - (1 hour)					
77.96 *(58.13)*	2250	5.18 *(19.60)*	0.468 *(0.285)*	15.06 *(2.97)*	
VARYING POWER AND FUEL CONSUMPTION					
76.01 *(56.68)*	2401	5.38 *(20.36)*	0.499 *(0.304)*	14.13 *(2.78)*	Air temperature
69.15 *(51.57)*	2563	5.39 *(20.40)*	0.550 *(0.334)*	12.83 *(2.53)*	76°F *(25°C)*
52.36 *(39.05)*	2587	4.69 *(17.77)*	0.632 *(0.384)*	11.15 *(2.20)*	Relative humidity
34.97 *(26.07)*	2603	3.91 *(14.82)*	0.789 *(0.480)*	8.93 *(1.76)*	48%
17.63 *(13.15)*	2628	2.68 *(10.15)*	1.072 *(0.652)*	6.58 *(1.30)*	Barometer
0.84 *(0.63)*	2639	1.84 *(6.98)*	15.404 *(9.370)*	0.46 *(0.09)*	28.99"Hg *(98.17 kPa)*

Maximum Torque 229 lb.-ft. *(310 Nm)* at 1401 rpm
Maximum Torque Rise - 37.9%
Torque rise at 1900 rpm - 19%

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Engaged dB(A)	Front Wheel Drive Disengaged dB(A)
At no load in 6th(B2) gear	85.8	85.8
Transport in 12th (C4) gear		85.8
Bystander in 12th (C4) gear		83.3

TIRES AND WEIGHT	Tested Without Ballast
Rear Tires–No., size, ply & psi *(kPa)*	Two 18.4R30;**;12 *(85)*
Front Tires–No., size, ply & psi *(kPa)*	Two 12.4-24;6;14 *(95)*
Height of Drawbar	18.0 in *(455 mm)*
Static Weight with operator– Rear	4625 lb *(2098 kg)*
– Front	2985 lb *(1354 kg)*
– Total	7610 lb *(3452 kg)*

FUEL, OIL and TIME: Fuel No. 2 Diesel **Specific gravity converted to 60°/60° F *(15°/15°C)*** 0.8468 **Fuel weight** 7.051 lbs/gal *(0.845 kg/l)* **Oil SAE** 10W30 **API service classification** CF/CH-4 **Transmission and hydraulic lubricant** John Deere Hy-Gard Fluid **Front axle lubricant** SAE 80W90 API GL-5 **Total time engine was operated** 12.5 hours

ENGINE: Make John Deere Diesel **Type** four cylinder vertical with turbocharger **Serial No.** *PE4045T414363* **Crankshaft** lengthwise **Rated engine speed** 2400 **Bore and stroke** 4.19" x 5.00" *(106.4 mm x 127.0 mm)* **Compression ratio** 17.6 to 1 **Displacement** 276 cu in *(4517 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** one paper element and one polyester felt element **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for transmission and hydraulic oil **Fuel filter** one paper element and sediment bowl **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** one thermostat

ENGINE OPERATING PARAMETERS: Fuel rate: 35.1 - 38.7 lb/h *(15.9 - 17.5 kg/h)* **High idle:** 2600 - 2650 rpm **Turbo boost:** nominal 11.6 - 14.5 psi *(80 - 100 kPa)* as measured 13.1 psi *(91 kPa)*

CHASSIS: Type front wheel assist **Serial No.** *LV5525R155016* **Tread width** rear 54.8" *(1417 mm)* to 71.7" *(1820 mm)* front 52.8" *(1340 mm)* to 75.0" *(1904 mm)* **Wheelbase** 85.7" *(2178 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph *(km/h)*** first 1.05 *(1.69)* second 1.42 *(2.29)* third 1.94 *(3.13)* fourth 2.60 *(4.19)* fifth 3.02 *(4.86)* sixth 4.11 *(6.61)* seventh 5.61 *(9.03)* eighth 7.51 *(12.09)* ninth 8.72 *(14.04)* tenth 11.88 *(19.12)* eleventh 16.21 *(26.09)* twelfth 21.72 *(34.96)* reverse 1.14 *(1.84)*, 1.55 *(2.50)*, 2.12 *(3.42)*, 2.85 *(4.58)*, 3.29 *(5.30)*, 4.48 *(7.21)*, 6.12 *(9.85)*, 8.20 *(13.19)*, 9.52 *(15.32)*, 12.96 *(20.85)*, 17.69 *(28.47)*, 23.69 *(38.13)* **Clutch** single dry disc operated by foot pedal **Brakes** single wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 2410 engine rpm or 540 rpm at 1716 engine rpm **Unladen tractor mass** 7435 lb *(3372 kg)*

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: II		
Quick Attach: None		
Maximum force exerted through whole range:	3213 lbs	*(14.3 kN)*
i) Opening pressure of relief valve:	NA	
Sustained pressure of the open relief valve:	2860 psi	*(197 bar)*
ii) Pump delivery rate at minimum pressure and rated engine speed:	18.6 GPM	*(70.4 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	18.7 GPM	*(70.8 l/min)*
Delivery pressure:	2516 psi	*(174 bar)*
Power:	27.4 HP	*(20.5 kW)*

THREE POINT HITCH PERFORMANCE

Observed maximum pressure psi. *(bar)*	2830 *(195)*
Location:	remote outlet
Hydraulic oil temperature: °F *(°C)*	148 *(64)*
Location:	pump inlet
Category:	II
Quick attach:	none

SAE Static Test—System pressure 2520 psi *(174 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	4694	4829	4685	4266	3596
" " " " " " *(kN)*	*(20.9)*	*(21.5)*	*(20.8)*	*(19.0)*	*(16.0)*

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 136°F *(58°C)*.

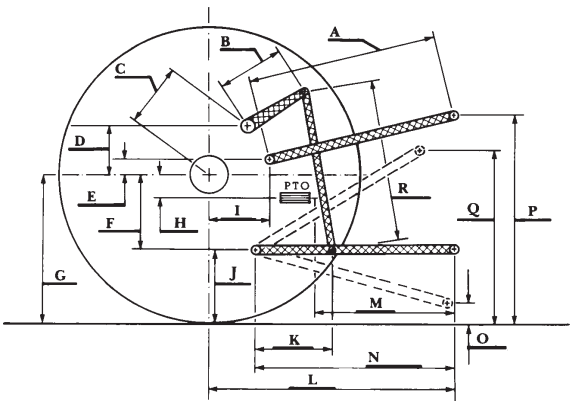
We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1869**, March 17, 2006

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	23.2	*590*	24.1	*613*
B	11.0	*280*	11.0	*280*
C	14.0	*356*	14.0	*356*
D	12.2	*311*	12.2	*311*
E	11.2	*284*	11.2	*284*
F	6.5	*166*	6.5	*166*
G	27.4	*695*	27.4	*695*
H	0.2	*4*	0.2	*4*
I	15.1	*384*	15.1	*384*
J	20.9	*530*	20.9	*530*
K	16.7	*424*	16.7	*424*
L	39.2	*996*	39.2	*996*
M	22.4	*570*	22.4	*570*
N	32.9	*836*	32.9	*836*
O	8.0	*203*	8.0	*203*
P	40.9	*1040*	44.9	*1140*
Q	34.0	*864*	34.0	*864*
R	20.8	*527*	20.8	*527*

HITCH DIMENSIONS AS TESTED - NO LOAD



Shiftable PTO Performance

Economy mode
540 PTO rpm @ 1716 engine rpm

Power HP *(kW)*	Crank shaft speed rpm	Gal/hr *(l/h)*	lb/hp.hr *(kg/kW.h)*	Hp.hr/gal *(kW.h/l)*
63.91 *(47.66)*	1712	3.90 *(14.76)*	0.430 *(0.262)*	16.39 *(3.23)*
48.12 *(35.88)*	1718	3.11 *(11.76)*	0.455 *(0.277)*	15.49 *(3.05)*
32.48 *(24.22)*	1722	2.18 *(8.27)*	0.474 *(0.288)*	14.87 *(2.93)*
15.94 *(11.88)*	1715	1.40 *(5.31)*	0.621 *(0.378)*	11.35 *(2.24)*
0.51 *(0.38)*	1716	0.84 *(3.17)*	11.477 *(6.981)*	0.61 *(0.12)*

Normal mode
540 PTO rpm @2410 engine rpm

64.00 *(47.73)*	2410	4.86 *(18.41)*	0.536 *(0.326)*	13.16 *(2.59)*
48.07 *(35.84)*	2412	4.04 *(15.30)*	0.593 *(0.361)*	11.89 *(2.34)*
32.57 *(24.29)*	2422	3.25 *(12.29)*	0.703 *(0.428)*	10.03 *(1.98)*
15.96 *(11.90)*	2413	2.14 *(8.11)*	0.946 *(0.575)*	7.45 *(1.47)*
0.67 *(0.50)*	2411	1.56 *(5.91)*	16.460 *(10.012)*	0.43 *(0.08)*

JOHN DEERE 5525 DIESEL

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