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Test 1757: John Deere 5510 Diesel 9-Speed

Nebraska Tractor Test Lab

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NEBRASKA TRACTOR TEST 1757

JOHN DEERE 5510 DIESEL

ALSO JOHN DEERE 5520 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					
Rated Engine Speed—(PTO speed—545 rpm)					
76.24 (56.85)	2400	4.61 (17.45)	0.428 (0.260)	16.54 (3.26)	
Maximum Power - (2 hours)					
82.24 (61.33)	2000	4.39 (16.62)	0.378 (0.230)	18.74 (3.69)	

VARYING POWER AND FUEL CONSUMPTION

76.24 (56.85)	2400	4.61 (17.45)	0.428 (0.260)	16.54 (3.26)	Air temperature
67.67 (50.46)	2509	4.45 (16.84)	0.466 (0.283)	15.21 (3.00)	74°F (23°C)
51.27 (38.23)	2536	3.77 (14.27)	0.521 (0.317)	13.60 (2.68)	Relative humidity
34.57 (25.78)	2557	3.13 (11.87)	0.642 (0.391)	11.03 (2.17)	86%
17.41 (12.98)	2578	2.25 (8.50)	0.913 (0.556)	7.75 (1.53)	Barometer
0.56 (0.42)	2587	1.61 (6.09)	20.357 (12.383)	0.35 (0.07)	28.68"Hg (97.12 kPa)

Maximum Torque 236 lb.-ft. (320 Nm) at 1289 rpm
Maximum Torque Rise - 41.5%
Torque rise at 1899 rpm - 35%

TRACTOR SOUND LEVEL WITHOUT CAB (5510)	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
At no load in 5th(B2) gear	91.8	91.9
Bystander in 9th(C3) gear	--	82.7

TRACTOR SOUND LEVEL WITH CAB (5510)	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
At no load in 5th(B2) gear	84.2	83.8
Bystander in 9th (C3) gear	--	84.7

TRACTOR SOUND LEVEL WITH CAB (5520)	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
At no load in 7th(B3) gear	81.6	81.4
Bystander in 12th(C4) gear	--	85.2

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 18.4-30; 6; 12 (85)
Two 11.2-24; 6; 14 (95)
19.0 in (485 mm)
3775 lb (1712 kg)
2750 lb (1247 kg)
6525 lb (2959 kg)

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

Dates of Test: October 16-19, 1998.

Sound test on John Deere 5520: October 24, 2001

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) 0.8506 Fuel weight 7.082 lbs/gal (0.849 kg/l) Oil SAE 10W30 API service classification CE/CF-4 Transmission and hydraulic lubricant John Deere Hy-Gard Fluid Front axle lubricant SAE 80W90 API GL-5 Total time engine was operated 12.0 hours

ENGINE: Make John Deere Diesel Type four cylinder vertical with turbocharger Serial No. *PE 4045T 009039* Crankshaft lengthwise Rated engine speed 2400 Bore and stroke 4.19" x 5.00" (106.4 mm x 127.0 mm) Compression ratio 17.0 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: 31.6 - 34.8 lb/h (14.3 - 15.8 kg/h) High idle: 2550 - 2600 rpm Turbo boost: nominal 9.4 - 10.9 psi (65 - 75 kPa) as measured 10.0 psi (69 kPa)

CHASSIS: Type front wheel assist Serial No. *LV5510S-152262* Tread width rear 60.0" (1524 mm) to 72.5" (1841 mm) front 51.6" (1311 mm) to 75.9" (1927 mm) Wheelbase 85.7" (2177 mm) Hydraulic control system direct engine drive Transmission selective gear fixed ratio Nominal travel speeds mph (km/h) first 1.37 (2.20) second 1.98 (3.18) third 2.70 (4.34) fourth 3.23 (5.20) fifth 4.66 (7.50) sixth 6.36 (10.23) seventh 8.87 (14.27) eighth 12.81 (20.61) ninth 17.46 (28.10) reverse 2.30 (3.70), 5.43 (8.74), 14.91 (23.99) 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 2376 engine rpm Unladen tractor mass 6360 lb (2885 kg)

JOHN DEERE 5510 DIESEL

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: II

Quick Attach: None

Maximum Force Exerted Through Whole Range: 2905 lbs (12.9 kN)

i) Opening pressure of relief valve:	NA
Sustained pressure of the open relief valve:	2940 psi (203 bar)
ii) Pump delivery rate at minimum pressure and rated engine speed:	16.5 GPM (62.5 l/min)
iii) Pump delivery rate at maximum hydraulic power:	15.3 GPM (57.9 l/min)
• Delivery pressure:	2500 psi (172 bar)
Power:	22.3 HP (16.6 kW)

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi.(bar)	2830(195)
Location:	remote outlet
Hydraulic oil temperature: °F(°C)	170(77)
Location:	hydraulic sump
Category:	II
Quick attach:	none

ASAE Static Test—System pressure 2750 psi (190 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	4686	4713	4625	4178	3619
" " " " " (kN)	(20.8)	(21.0)	(20.6)	(18.6)	(16.1)

SAE Static Test—System pressure 2550 psi (176 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	4345	4370	4299	3874	3356
" " " " " (kN)	(19.3)	(19.4)	(19.1)	(17.2)	(14.9)

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 was maintained at 131°F (55°C).

Report reissued: Supplemental permit for John Deere 5520 Diesel, December 2001.

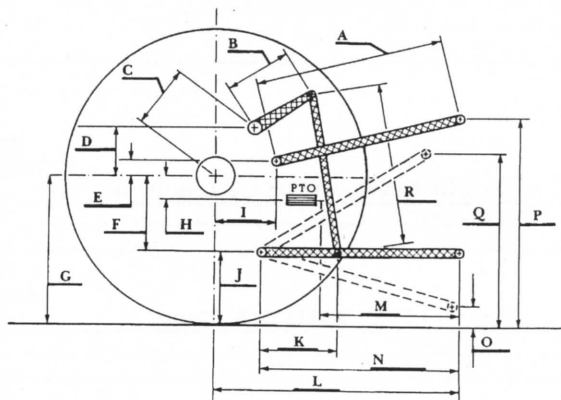
We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1757**, December 6, 2001.

Brent T. Sampson
Test Engineer

L.L. Bashford
M.F. Kocher
V.I. Adamchuk
Board of Tractor Test Engineers

	SAE/ASAE 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	20.8	530	20.8	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



JOHN DEERE 5520 DIESEL

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: II

Quick Attach: None

Maximum Force Exerted Through Whole Range: 3213 lbs (14.3 kN)

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

ASAE Static Test—System pressure 2750 psi (190 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	5140	5288	5130	4655	3924
" " " " " " (kN)	(22.9)	(23.5)	(22.8)	(20.7)	(17.5)

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)



JOHN DEERE 5520 DIESEL