

# NEBRASKA TRACTOR TEST 1754

## JOHN DEERE 5210 DIESEL

## ALSO JOHN DEERE 5220 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)					
46.16 (34.42)	2400	2.84 (10.76)	0.436 (0.265)	16.24 (3.20)	

#### VARYING POWER AND FUEL CONSUMPTION

46.16 (34.42)	2400	2.91 (10.76)	0.436 (0.265)	16.24 (3.20)	Air temperature
41.00 (30.58)	2509	2.58 (9.78)	0.446 (0.271)	15.87 (3.13)	76°F (24°C)
31.19 (23.26)	2537	2.16 (8.18)	0.491 (0.298)	14.44 (2.84)	Relative humidity
20.79 (15.50)	2559	1.69 (6.41)	0.577 (0.351)	12.27 (2.42)	48%
10.47 (7.80)	2580	1.31 (4.97)	0.889 (0.541)	7.97 (1.57)	Barometer
0.25 (0.18)	2599	0.85 (3.21)	24.236 (14.742)	0.29 (0.06)	29.08"Hg (98.48kPa)

Maximum Torque - 130 lb.-ft. (177 Nm) at 1350 rpm  
 Maximum Torque Rise - 28.9%  
 Torque rise at 1902 engine rpm - 15%

TRACTOR SOUND LEVEL WITHOUT CAB (5210)	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
At no load in 5th(B2) gear	89.4	89.6
Bystander in 9th (C3) gear	--	83.3

TRACTOR SOUND LEVEL WITH CAB (5220)	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
At no load in 5th(B2) gear	78.9	78.7
Bystander in 9th (C3) gear	--	84.8

#### 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; 6; 12 (85)  
 Two 9.5-24; 6; 12 (85)  
 17.0 in (430 mm)  
 3165 lb (1436 kg)  
 2070 lb (939 kg)  
 5235 lb (2375 kg)

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

**Dates of tests:** October 12-19, 1998

**Sound test on John Deere 5220:** November 6, 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 14.5 hours

**ENGINE:** Make John Deere Diesel Type three cylinder vertical Serial No. \*PE 3029D 007423\* Crankshaft lengthwise Rated engine speed 2400 Bore and stroke 4.19" x 4.33" (106.4 mm x 110.0 mm) Compression ratio 17.4 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 Oil cooler engine coolant heat exchanger for crankcase oil Fuel filter one paper element and sediment bowl Muffler underhood Exhaust vertical Cooling medium temperature control one thermostat

**ENGINE OPERATING PARAMETERS:** Fuel rate: 19.5 - 21.6 lb/h (8.8 - 9.8 kg/h) High idle: 2550 - 2600 rpm

**CHASSIS:** Type front wheel assist Serial No. \*LV5210S-122877\* Tread width rear 53.8" (1366 mm) to 69.7" (1770 mm) front 51.7" (1313 mm) to 75.9" (1927 mm) Wheelbase 80.7" (2050 mm) Hydraulic control system direct engine drive Transmission selective gear fixed ratio Nominal travel speeds mph (km/h) first 1.27 (2.05) second 1.84 (2.96) third 2.50 (4.03) fourth 3.01 (4.84) fifth 4.34 (6.98) sixth 5.92 (9.52) seventh 8.25 (13.28) eighth 11.92 (19.18) ninth 16.25 (26.15) reverse 2.14 (3.44), 5.05 (8.13), 13.87 (22.32) 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 5070 lb (2300 kg)

# JOHN DEERE 5210 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:	2930 psi (202 bar)
ii) Pump delivery rate at minimum pressure and rated engine speed:	12.7 GPM (48.1 l/min)
iii) Pump delivery rate at maximum hydraulic power:	10.5 GPM (39.7 l/min)
Delivery pressure:	2600 psi (179 bar)
Power:	15.9 HP (11.9 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 130°F (54°C).

**Report reissued:** Supplemental permit for John Deere 5220 Diesel, December 2001.

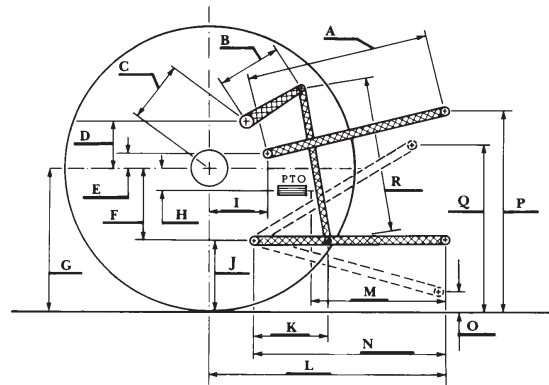
We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1754**, December 6, 2001.

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	20.9	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



## JOHN DEERE 5220 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 5220 Diesel