

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

---

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F.  
Larsen

---

January 2005

## Test 1866: John Deere 5225 Diesel 9-Speed

Tractor Museum

University of Nebraska-Lincoln, [TractorMuseumArchives@unl.edu](mailto:TractorMuseumArchives@unl.edu)

Follow this and additional works at: <http://digitalcommons.unl.edu/tractormuseumlit>



Part of the [Applied Mechanics Commons](#)

---

Museum, Tractor, "Test 1866: John Deere 5225 Diesel 9-Speed" (2005). *Nebraska Tractor Tests*. 2116.  
<http://digitalcommons.unl.edu/tractormuseumlit/2116>

This Article is brought to you for free and open access by the Tractor Test and Power Museum, The Lester F. Larsen at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nebraska Tractor Tests by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

# NEBRASKA TRACTOR TEST 1866

## JOHN DEERE 5225 DIESEL

### 9 SPEED

#### POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft 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)					
46.20 (34.45)	2399	3.35 (12.68)	0.511 (0.311)	13.79 (2.72)	
Maximum Power-(1 hour)					
47.59 (35.49)	2100	3.12 (11.79)	0.462 (0.281)	15.28 (3.01)	

#### VARYING POWER AND FUEL CONSUMPTION

46.20 (34.45)	2399	3.35 (12.68)	0.511 (0.311)	13.79 (2.72)	Air temperature
41.34 (30.83)	2519	3.22 (12.19)	0.549 (0.334)	12.84 (2.53)	75°F (24°C)
31.01 (23.13)	2539	2.65 (10.04)	0.603 (0.367)	11.69 (2.30)	Relative humidity
21.04 (15.69)	2564	2.16 (8.16)	0.722 (0.439)	9.76 (1.92)	40%
10.51 (7.84)	2592	1.70 (6.44)	1.142 (0.695)	6.17 (1.22)	Barometer
0.84 (0.62)	2617	1.32 (4.99)	11.114 (6.760)	0.63 (0.12)	29.02"Hg (98.27kPa)

Maximum torque 158 lb.-ft. (214 Nm) at 1349 rpm  
 Maximum torque rise - 55.8%  
 Torque rise at 1902 rpm - 27%

#### TRACTOR SOUND LEVEL WITHOUT CAB

	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
At no load in 5th(B2) gear	91.0	90.7
Transport in 9th(C3) gear		91.9
Bystander in 9th(C3) gear	--	80.8

#### 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 14.9-28;6;12 (85)  
 Two 9.5-24;6;14 (95)  
 16.0 in (405 mm)  
 3455 lb (1567 kg)  
 2370 lb (1075 kg)  
 5825 lb (2642 kg)

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

**Dates of tests:** November 21-23, 2005.

**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) 0.8468 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 8.5 hours

**ENGINE:** Make John Deere Diesel Type five cylinder vertical with turbocharger Serial No. \*PE5030T029162\* Crankshaft lengthwise Rated engine speed 2400 Bore and stroke 3.385" x 4.134" (86.0 mm x 105.0 mm) Compression ratio 20.5 to 1 Displacement 186 cu in (3050 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: 22.2 - 24.6 lb/h (10.1 - 11.1 kg/h) High idle: 2575 - 2675 rpm Turbo boost: nominal 11.6 - 14.5 psi (80 - 100 kPa) as measured 13.2 psi (91 kPa)

**CHASSIS:** Type front wheel assist Serial No. \*LV5225T122001\* 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 1.32 (2.01) second 1.81 (2.91) third 2.66 (4.28) fourth 3.16 (5.08) fifth 4.57 (7.35) sixth 6.72 (10.82) seventh 8.05 (12.95) eighth 11.63 (18.72) ninth 17.12 (27.55) reverse 2.06 (3.31), 5.20 (8.37), 13.25 (21.32) 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 2410 engine rpm or 540 at 1716 engine rpm Unladen tractor mass 5650 lb (2562 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:	2883 psi	(199 bar)
ii) Pump delivery rate at minimum pressure and rated engine speed:	13.9 GPM	(52.6 l/min)
iii) Pump delivery rate at maximum hydraulic power:	11.6 GPM	(43.9 l/min)
Delivery pressure:	2677 psi	(185 bar)
Power:	18.1 HP	(13.5 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 135°F (57°C).

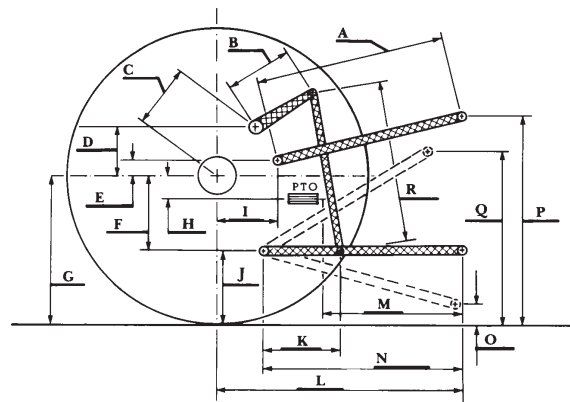
We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1866**, March 17, 2006.

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



**JOHN DEERE 5225 DIESEL**

Institute of Agriculture and Natural Resources  
University of Nebraska-Lincoln