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January 2005

## Test 1868: John Deere 5425 Diesel 12-Speed

Nebraska Tractor Test Lab

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# NEBRASKA TRACTOR TEST 1868

## JOHN DEERE 5425 DIESEL

### 12 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—537 rpm)					
66.25 (49.41)	2401	4.68 (17.73)	0.498 (0.303)	14.15 (2.79)	
Maximum Power - (1 hour)					
67.99 (50.70)	2201	4.52 (17.13)	0.469 (0.285)	15.03 (2.96)	

#### VARYING POWER AND FUEL CONSUMPTION

66.25 (49.41)	2401	4.68 (17.73)	0.498 (0.303)	14.15 (2.79)	Air temperature
59.48 (44.35)	2534	4.60 (17.39)	0.549 (0.331)	12.94 (2.55)	74°F (24°C)
45.05 (33.60)	2565	3.97 (15.03)	0.621 (0.378)	11.35 (2.24)	Relative humidity
30.42 (22.69)	2592	3.25 (12.29)	0.753 (0.458)	9.37 (1.85)	39%
15.31 (11.42)	2615	2.35 (8.91)	1.084 (0.659)	6.50 (1.28)	Barometer
0.56 (0.42)	2631	1.72 (6.50)	21.579 (13.126)	0.33 (0.06)	29.27"Hg (99.12 kPa)

Maximum Torque 208 lb.-ft. (282 Nm) at 1497 rpm  
Maximum Torque Rise - 43.4%  
Torque rise at 1896 rpm - 25%

#### TRACTOR SOUND LEVEL WITHOUT CAB

	Front Wheel Drive Engaged dB(A)	Disengaged dB(A)
At no load in 6th(B2) gear	90.1	90.1
Transport in 12th(C4) gear		91.1
Bystander in 12th(C4) gear	--	83.0

#### 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 420/90R30; \*\*, 12 (85)  
Two 11.2-24; 8; 14 (95)  
17.0 in (435 mm)  
4115 lb (1867 kg)  
2805 lb (1272 kg)  
6920 lb (3139 kg)

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

**Dates of tests:** November 16-23, 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 12.0 hours

**ENGINE:** Make John Deere Diesel Type four cylinder vertical with turbocharger Serial No. \*PE4045T401903\* 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: 31.7 - 35.3 lb/h (14.4 - 16.0 kg/h) High idle: 2600 - 2650 rpm Turbo boost: nominal 10.9 - 13.8 psi (75 - 95 kPa) as measured 12.4 psi (86 kPa)

**CHASSIS:** Type front wheel assist Serial No. \*LV5425R145001\* 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 1.01 (1.63) second 1.37 (2.21) third 1.88 (3.02) fourth 2.52 (4.05) fifth 2.91 (4.69) sixth 3.96 (6.38) seventh 5.41 (8.71) eighth 7.25 (11.67) ninth 8.43 (13.56) tenth 11.46 (18.45) eleventh 15.65 (25.19) twelfth 20.96 (33.74) reverse 1.10 (1.77), 1.50 (2.42), 2.05 (3.30), 2.75 (4.42), 3.18 (5.12), 4.32 (6.96), 5.90 (9.50), 7.91 (12.73), 9.19 (14.79), 12.50 (20.13), 17.08 (27.48), 22.87 (36.81) 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 6745 lb (3059 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: 2884 psi (199 bar)

ii) Pump delivery rate at minimum pressure and rated engine speed: 18.7 GPM (70.8 l/min)

iii) Pump delivery rate at maximum hydraulic power: 18.0 GPM (68.1 l/min)

Delivery pressure: 2516 psi (174 bar)

Power: 26.4 HP (19.7 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.

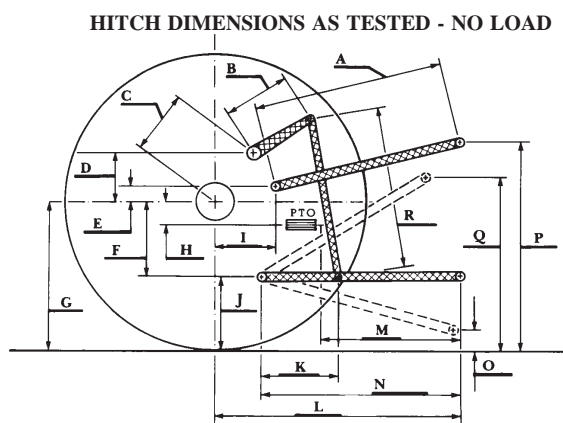
**REMARKS:** All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 138°F (59°C).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 1868, 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



**JOHN DEERE 5425 DIESEL**

Institute of Agriculture and Natural Resources  
University of Nebraska-Lincoln