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2009

## Test 1950 John Deere 6130D Diesel

Nebraska Tractor Test Laboratory

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# NEBRASKA OECD TRACTOR TEST 1950–SUMMARY 632

## JOHN DEERE 6130D 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
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>					
<b>Rated Engine Speed—(PTO speed—1017 rpm)</b>					
108.29 (80.76)	2100	6.74 (25.53)	0.439 (0.267)	16.06 (3.16)	
<b>Standard Power Take-off Speed (1000 rpm)</b>					
109.13 (81.38)	2065	6.75 (25.57)	0.436 (0.266)	16.16 (3.18)	
<b>Maximum Power (1 hour)</b>					
109.64 (81.76)	2049	6.71 (25.39)	0.431 (0.262)	16.35 (3.22)	

#### VARYING POWER AND FUEL CONSUMPTION

108.29 (80.76)	2100	6.74 (25.53)	0.439 (0.267)	16.06 (3.16)	Air temperature
93.52 (69.74)	2136	6.12 (23.15)	0.461 (0.281)	15.29 (3.01)	77°F (25°C)
70.83 (52.82)	2152	5.07 (19.18)	0.507 (0.307)	13.98 (2.75)	Relative humidity
47.76 (35.61)	2177	3.85 (14.58)	0.569 (0.346)	12.40 (2.44)	25%
24.10 (17.97)	2197	2.67 (10.12)	0.783 (0.476)	9.01 (1.78)	Barometer
3.04 (2.27)	2200	1.67 (6.31)	3.865 (2.351)	1.82 (0.36)	28.28 Hg (95.77 kPa)

Maximum torque - 344 lb.-ft. (466 Nm) at 1400 rpm  
 Maximum torque rise - 27.0%  
 Torque rise at 1700 engine rpm - 23%  
 Power increase at 2050 engine rpm - 1.2%

#### DRAWBAR PERFORMANCE UNBALLASTED - FRONT DRIVE ENGAGED FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
<b>Maximum Power—5th (B2) Gear</b>									
91.70 (68.38)	6123 (27.24)	5.62 (9.04)	2099	6.2	0.524 (0.319)	13.45 (2.65)	173 (78)	54 (12)	28.59 (96.82)
<b>75% of Pull at Maximum Power—5th (B2) Gear</b>									
71.80 (53.54)	4594 (20.43)	5.86 (9.43)	2140	4.2	0.585 (0.356)	12.05 (2.37)	172 (78)	57 (14)	28.57 (96.75)
<b>50% of Pull at Maximum Power—5th (B2) Gear</b>									
49.05 (36.58)	3048 (13.56)	6.04 (9.72)	2163	2.4	0.656 (0.399)	10.76 (2.12)	169 (76)	57 (14)	28.56 (96.72)
<b>75% of Pull at Reduced Engine Speed—6th (B3) Gear</b>									
71.99 (53.68)	4596 (20.45)	5.87 (9.45)	1666	4.0	0.536 (0.326)	13.17 (2.59)	173 (79)	58 (14)	28.55 (96.68)
<b>50% of Pull at Reduced Engine Speed—6th (B3) Gear</b>									
48.87 (36.44)	3023 (13.45)	6.06 (9.76)	1692	2.4	0.622 (0.378)	11.34 (2.23)	170 (77)	58 (14)	28.56 (96.72)

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

**Dates of tests:** March 30 - April 21, 2009

**Manufacturer:** Industrious John Deere, Boulevard Valdez Sanchez # 470, Saltillo, Coahuila CP25005 Mexico

**FUEL, OIL and TIME:** Fuel No. 2 Diesel Specific gravity converted to 60°/60°F (15°/15°C) 0.8470 Fuel weight 7.052 lbs/gal (0.845 kg/l) Oil SAE 15W-40 API service classification CJ-4 Transmission and hydraulic lubricant John Deere Hy-Gard fluid Front axle lubricant John Deere Hy-Gard fluid Total time engine was operated: 23.5 hours

**ENGINE: Make** John Deere Diesel **Type** Four cylinder vertical with turbocharger and air to air intercooler **Serial No.** \*PE4045L075338\* **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 4.19 x 5.00" (106.5 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** two paper elements and aspirator **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** two paper elements **Fuel cooler** radiator for pump return fuel **Muffler** vertical **Cooling medium temperature control** 1 thermostat and variable speed fan

**ENGINE OPERATING PARAMETERS: Fuel rate:** 47.6 - 51.6 lb/h (21.6 - 23.4 kg/h) **High idle:** 2175 - 2225 rpm **Turbo boost:** nominal 20.3-23.2 psi (140-160 kPa) as measured 21.6 psi (149 kPa)

**CHASSIS: Type** front wheel assist **Serial No.** \*P06130X001231\* **Tread width** rear 59.5" (1512 mm) to 79.4" (2016 mm) front 59.5" (1512 mm) to 79.4" (2016 mm) **Wheelbase** 92.5" (2350 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph (km/h)** first 1.83 (2.95) second 2.53 (4.07) third 3.25 (5.23) fourth 4.31 (6.93) fifth 5.95 (9.57) sixth 7.64 (12.29) seventh 10.33 (16.63) eighth 14.27 (22.96) ninth 18.33 (29.50) reverse 1.90 (3.05), 2.62 (4.21), 3.36 (5.41), 4.46 (7.17), 6.15 (9.90), 7.90 (12.72), 10.69 (17.20), 14.76 (23.75), 18.96 (30.52) **Clutch** wet multiple disc hydraulically actuated by foot pedal **Brakes** wet multiple disc mechanically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 2085 engine rpm or 1000 rpm at 2067 engine rpm **Unladen tractor mass** 9920 lb (4500 kg)

**DRAWBAR PERFORMANCE  
UNBALLASTED - FRONT DRIVE ENGAGED  
MAXIMUM POWER IN SELECTED GEARS**

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp.°F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
4th(B1)Gear									
85.97 (64.11)	8435 (37.52)	3.82 (6.15)	2105	12.4	0.564 (0.343)	12.51 (2.46)	175 (79)	58 (14)	28.57 (96.75)
5th(B2)Gear									
91.70 (68.38)	6123 (27.24)	5.62 (9.04)	2099	6.2	0.524 (0.319)	13.45 (2.65)	173 (78)	54 (12)	28.59 (96.82)
6th(B3)Gear									
92.68 (69.11)	4699 (20.90)	7.40 (11.90)	2101	5.2	0.516 (0.314)	13.66 (2.69)	174 (79)	57 (14)	28.57 (96.75)

**UNBALLASTED - FRONT DRIVE ENGAGED-2050 RPM**

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp.°F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
4th (B1)Gear									
85.46 (63.73)	8664 (38.54)	3.70 (5.95)	2074	13.7	0.563 (0.343)	12.52 (2.47)	175 (80)	58 (14)	28.57 (96.75)
5th(B2)Gear									
92.64 (69.08)	6367 (28.32)	5.46 (8.78)	2052	6.9	0.513 (0.312)	13.75 (2.71)	176 (80)	54 (12)	28.59 (96.82)
6th(B3)Gear									
93.92 (70.04)	4895 (21.77)	7.19 (11.58)	2050	5.5	0.513 (0.312)	13.75 (2.71)	174 (79)	56 (13)	28.58 (96.78)

**TRACTOR SOUND LEVEL WITH CAB**

	Front Wheel Drive Engaged dB(A)	Disengaged dB(A)
At no load in 4th (B1) gear	76.3	76.3
Transport speed - no load - 9th (C3) gear		78.5
Bystander in 9th (C3) gear		86.3

**TIRES, BALLAST AND WEIGHT**

	With Ballast	Without Ballast
<b>Rear Tires</b> - No., size, ply & psi(kPa)	Two 18.4-38;8;13(90)	Two 18.4-38;8;12(85)
<b>Ballast</b> - Liquid (total)	None	None
- Cast Iron (total)	1000 lb (454 kg)	None
<b>Front Tires</b> - No., size, ply & psi(kPa)	Two 14.9-24;8;18(125)	Two 14.9-24;8;12(85)
<b>Ballast</b> - Liquid (total)	None	None
- Cast Iron (total)	1275 lb (578 kg)	None
<b>Height of Drawbar</b>	22.0 in (560 mm)	21.0 in (535 mm)
<b>Static Weight with operator</b> - Rear	7170 lb (3252 kg)	6375 lb (2892 kg)
- Front	5200 lb (2359 kg)	3720 lb (1687 kg)
- Total	12370 lb (5611 kg)	10095 lb (4579 kg)

**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 fuel pump inlet was maintained at 144°F (62°C). The performance figures on this summary were taken from a test conducted under the OECD Code II test code procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1950**, Nebraska Summary 632, July 31, 2009.

Roger M. Hoy  
Director

M.F. Kocher  
V.I. Adamchuk  
J.A. Smith  
Board of Tractor Test Engineers

**DRAWBAR PERFORMANCE**  
**BALLASTED - FRONT DRIVE ENGAGED (2050 RPM)**  
**MAXIMUM POWER IN SELECTED GEARS**

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)	
3rd (A3) Gear									
80.28 (59.87)	10426 (46.38)	2.89 (4.65)	2132	15.0	0.572 (0.348)	12.32 (2.43)	175 (79)	42 (6)	28.78 (97.46)
4th (B1) Gear									
92.02 (68.62)	8995 (40.01)	3.84 (6.17)	2055	10.8	0.520 (0.316)	13.57 (2.67)	175 (79)	46 (8)	28.77 (97.43)
5th (B2) Gear									
93.36 (69.62)	6337 (28.19)	5.52 (8.89)	2053	7.3	0.510 (0.310)	13.82 (2.72)	175 (80)	50 (10)	28.77 (97.43)
6th (B3) Gear									
92.16 (68.72)	4798 (21.34)	7.20 (11.59)	2049	6.1	0.518 (0.315)	13.60 (2.68)	175 (79)	52 (11)	28.76 (97.39)

## HYDRAULIC PERFORMANCE

CATEGORY: II

Quick Attach: None

OECD Static test

Maximum Force exerted through whole range: 6841 lbs (30.4 kN)

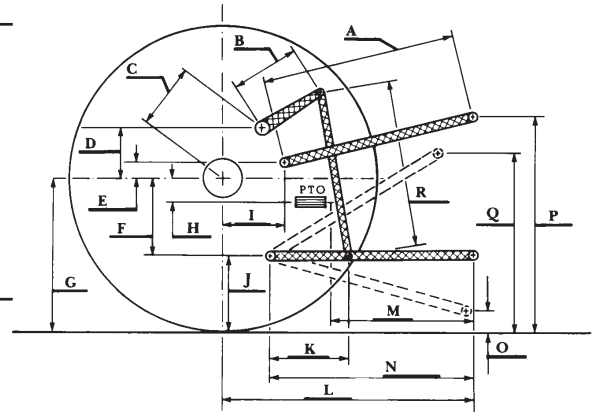
i) Sustained pressure with relief valve open: 3120 psi (215 bar)

ii) Pump delivery rate at minimum pressure and rated engine speed: 19.1 GPM (72.3 l/min)

iii) Pump delivery rate at maximum hydraulic power: 16.5 GPM (62.5 l/min)

Delivery pressure: 2550 psi (176 bar)

Power: 24.5 HP (18.3 kW)



### HITCH DIMENSIONS AS TESTED—NO LOAD

<b>THREE POINT HITCH PERFORMANCE(SAE Static test)</b>					
Observed maximum pressure psi. (bar)	2840 (195)				
Location:	hydraulic manifold				
Hydraulic oil temperature: °F (°C)	149 (65)				
Location:	hydraulic sump				
Category:	II				
Quick attach:	No				
System pressure 2480 psi (171 Bar)					
Hitch point distance to ground level in. (mm)	8.0 (203)	15.1 (384)	22.0 (559)	29.1 (739)	36.0 (915)
Lift force on frame lb	10343	9597	8880	8389	7224
" " " " " " (kN)	(46.0)	(42.7)	(39.5)	(37.3)	(32.1)

	OECD test		SAE test	
	inch	mm	inch	mm
A	26.8	680	25.7	652
B	12.8	325	12.8	325
C	20.4	518	20.4	518
D	18.6	473	18.6	473
E	6.0	153	6.0	153
F	6.9	176	6.9	176
G	32.3	820	32.3	820
H	2.9	48	2.9	48
I	19.3	489	19.3	489
J	25.4	644	25.4	644
K	19.8	503	19.8	503
L	44.1	1121	44.1	1121
M	22.3	566	22.3	566
N	37.2	945	37.2	945
O	7.7	195	7.7	195
P	49.4	1254	44.4	1127
Q	32.3	820	32.3	820
R	31.7	805	31.7	805



### JOHN DEERE 6130D DIESEL

Institute of Agriculture and Natural Resources  
University of Nebraska–Lincoln