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January 2006

Test 1888: John Deere 8330T Diesel 16-Speed

Nebraska Tractor Test Lab

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NEBRASKA OECD TRACTOR TEST 1888—SUMMARY 555

JOHN DEERE 8330T DIESEL

16 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—1048 rpm)					
237.63 (177.20)	2100	13.27 (50.24)	0.391 (0.238)	17.90 (3.53)	
Standard Power Take-off Speed(1000 rpm)					
256.20 (191.04)	2003	13.93 (52.73)	0.381 (0.232)	18.39 (3.62)	
Maximum Power (1 hour)					
270.21 (201.50)	1700	15.07 (57.07)	0.391 (0.238)	17.93 (3.53)	

VARYING POWER AND FUEL CONSUMPTION

237.63 (177.20)	2100	13.27 (50.24)	0.391 (0.238)	17.90 (3.53)	Air temperature
206.98 (154.35)	2154	12.00 (45.41)	0.406 (0.247)	17.25 (3.40)	75°F (24°C)
156.23 (116.50)	2165	9.84 (37.25)	0.441 (0.268)	15.88 (3.13)	Relative humidity
104.32 (77.79)	2174	7.68 (29.09)	0.516 (0.314)	13.58 (2.67)	24%
52.45 (39.11)	2186	5.28 (20.00)	0.705 (0.429)	9.93 (1.96)	Barometer
1.51 (1.13)	2193	3.96 (14.98)	18.326 (11.147)	0.38 (0.08)	28.90" Hg (97.87 kPa)

Maximum torque - 879 lb.-ft. (1192 Nm) at 1599 rpm

Maximum torque rise - 47.9%

Torque rise at 1701 engine rpm - 40%

DRAWBAR PERFORMANCE (Unballasted)

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)
Maximum Power—9th Gear									
202.53 (151.03)	17728 (78.86)	4.28 (6.89)	2098	3.01	0.461 (0.281)	15.18 (2.99)	192 (89)	58 (14)	28.54 (96.65)
75% of Pull at Maximum Power—9th Gear									
158.73 (118.37)	13296 (59.14)	4.48 (7.20)	2157	1.39	0.495 (0.301)	14.15 (2.79)	179 (82)	49 (9)	29.01 (98.24)
50% of Pull at Maximum Power—9th Gear									
107.26 (79.98)	8866 (39.44)	4.54 (7.30)	2170	0.67	0.583 (0.355)	12.01 (2.36)	177 (81)	49 (9)	29.01 (98.24)
75% of Pull at Reduced Engine Speed—11th Gear									
158.87 (118.47)	13289 (59.11)	4.48 (7.21)	1612	1.32	0.468 (0.285)	14.96 (2.95)	185 (85)	50 (10)	29.01 (98.24)
50% of Pull at Reduced Engine Speed—11th Gear									
107.25 (79.98)	8883 (39.51)	4.53 (7.29)	1617	0.71	0.513 (0.312)	13.65 (2.69)	179 (81)	50 (10)	29.01 (98.24)

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

Dates of tests: September 28 - October 26, 2006

Manufacturer: John Deere Tractor Works, 3500 East Donald St., P.O. Box 270, Waterloo Ia, 50704-0270

FUEL, OIL and TIME: Fuel No. 2 Diesel Specific gravity converted to 60°/60°F (15°/15°C) 0.8409 Fuel weight 7.002 lbs/gal (0.839 kg/l) Oil SAE 15W-40 API service classification CI-4 Transmission and hydraulic lubricant John Deere Hy-Gard fluid Total time engine was operated: 24.5 hours

ENGINE: Make John Deere Diesel **Type** six cylinder vertical with turbocharger and air to air aftercooler **Serial No.***RG6090L005576* **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 4.661" x 5.354" (118.4 mm x 136.0 mm) **Compression ratio** 16.3 to 1 **Displacement** 548 cu in (8984 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** one paper element and prestrainer **Fuel cooler** radiator for pump return fuel **Muffler** vertical **Cooling medium temperature control** 2 thermostats and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate: 90.2 - 97.4 lb/h (40.9 - 44.2 kg/h) **High idle:** 2175 - 2225 rpm **Turbo boost:** nominal 24.7 - 27.6 psi (170 - 190 kPa) as measured 26.3 psi (181 kPa)

CHASSIS: Type tracklayer-rubber tracked **Serial No.***RW8330T901179* **Track width** 91.9" (2335 mm) to 119.5" (3035 mm) **Length of track on ground** 89.0" (2261 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with full range operator controlled power shift **Nominal travel speeds mph (km/h)** first 0.91 (1.47) second 1.22 (1.96) third 1.62 (2.61) fourth 2.17 (3.50) fifth 2.44 (3.93) sixth 2.81 (4.53) seventh 3.27 (5.26) eighth 3.77 (6.06) ninth 4.35 (7.00) tenth 5.01 (8.07) eleventh 5.83 (9.38) twelfth 6.72 (10.81) thirteenth 7.92 (12.74) fourteenth 10.60 (17.06) fifteenth 14.12 (22.72) sixteenth 18.91 (30.43) reverse 0.85 (1.37), 2.28 (3.67), 2.88 (4.64), 5.29 (8.51) @ 1500 engine rpm **Clutch** wet multiple disc hydraulically actuated by foot pedal **Brakes** wet multiple disc hydraulically actuated by foot pedal **Steering** electro-hydraulic differential steering controlled by steering wheel **Power take-off** 1000 rpm at 2003 engine rpm **Unladen tractor mass** 28175 lb (12780 kg)

DRAWBAR PERFORMANCE

Unballasted - 2100 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)	Consumption Hp.hr/gal (kW.h/l)	Temp.°F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
6th Gear									
176.48 (131.60)	26627 (118.44)	2.49 (4.00)	2106	13.25	0.527 (0.321)	13.28 (2.62)	181 (83)	44 (7)	29.01 (98.24)
7th Gear									
193.38 (144.20)	23455 (104.33)	3.09 (4.98)	2100	6.84	0.485 (0.295)	14.44 (2.84)	181 (83)	45 (7)	29.01 (98.24)
8th Gear									
199.21 (148.55)	20457 (91.00)	3.65 (5.88)	2099	4.56	0.471 (0.287)	14.85 (2.93)	183 (84)	47 (8)	29.01 (98.24)
9th Gear									
202.53 (151.03)	17728 (78.86)	4.28 (6.89)	2098	3.01	0.461 (0.281)	15.18 (2.99)	192 (89)	58 (14)	28.54 (96.65)
10th Gear									
204.74 (152.68)	15364 (68.34)	5.00 (8.04)	2098	1.85	0.455 (0.277)	15.38 (3.03)	191 (88)	56 (13)	28.55 (96.68)
11th Gear									
203.65 (151.86)	13060 (58.09)	5.85 (9.41)	2101	1.29	0.457 (0.278)	15.33 (3.02)	197 (92)	59 (15)	28.53 (96.61)
12th Gear									
203.14 (151.48)	11265 (50.11)	6.76 (10.88)	2100	0.94	0.459 (0.279)	15.24 (3.00)	198 (92)	61 (16)	28.52 (96.58)
13th Gear									
201.90 (150.55)	9491 (42.22)	7.98 (12.84)	2098	0.71	0.464 (0.282)	15.11 (2.98)	200 (93)	63 (17)	28.51 (96.55)

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 115°F(46°C). The performance figures on this summary were taken from a test conducted under the OECD Code II test procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1888**, Nebraska Summary 555, December 8, 2006.

Roger M. Hoy
Director

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

TRACTOR SOUND LEVEL WITH CAB

dB(A)

At no load in 9th gear	72.2
Transport speed - no load - 16th gear	74.8
Bystander in 16th gear	87.7

TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
Track width	25.0 in (635 mm)	25.0 in (635 mm)
Ballast - Cast iron(front)	2105 lb (955 kg)	None
Height of Drawbar	19.0 in (485 mm)	18.5 in (470 mm)
Static Weight with operator	30455 lb(13814 kg)	28350 lb(12859 kg)

DRAWBAR PERFORMANCE
Unballasted - 1700 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)	Fuel Consumption Hp.hr/gal (kW.h/l)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
6th Gear									
178.50 (133.11)	26783 (119.13)	2.50 (4.02)	2100	12.53	0.526 (0.320)	13.32 (2.62)	181 (83)	43 (6)	29.01 (98.24)
7th Gear									
195.51 (145.79)	24701 (109.88)	2.97 (4.78)	2060	8.85	0.490 (0.298)	14.29 (2.81)	184 (84)	46 (8)	29.01 (98.24)
8th Gear									
210.22 (156.76)	23338 (103.81)	3.38 (5.44)	1998	7.24	0.468 (0.284)	14.97 (2.95)	188 (87)	47 (8)	29.01 (98.24)
9th Gear									
222.49 (165.91)	22825 (101.53)	3.66 (5.88)	1864	6.85	0.462 (0.281)	15.14 (2.98)	198 (92)	46 (8)	29.01 (98.24)
10th Gear									
227.47 (169.62)	21849 (97.19)	3.90 (6.28)	1702	5.47	0.464 (0.282)	15.09 (2.97)	202 (94)	57 (14)	28.54 (96.65)
11th Gear									
230.65 (171.99)	18697 (83.17)	4.63 (7.44)	1699	3.39	0.458 (0.279)	15.29 (3.01)	201 (94)	60 (16)	28.53 (96.61)
12th Gear									
235.48 (175.60)	16341 (72.69)	5.40 (8.70)	1701	2.27	0.448 (0.272)	15.64 (3.08)	201 (94)	62 (17)	28.52 (96.58)
13th Gear									
237.24 (176.91)	13859 (61.65)	6.42 (10.33)	1702	1.54	0.446 (0.271)	15.69 (3.09)	201 (94)	48 (9)	29.01 (98.24)
14th Gear									
233.44 (174.08)	10087 (44.87)	8.68 (13.97)	1705	0.81	0.454 (0.276)	15.41 (3.04)	200 (93)	48 (9)	29.01 (98.24)

DRAWBAR PERFORMANCE
Ballasted - 1700 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)	Fuel Consumption Hp.hr/gal (kW.h/l)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
5th Gear									
173.17 (129.13)	29891 (132.96)	2.17 (3.50)	2120	13.31	0.534 (0.325)	13.11 (2.58)	182 (83)	51 (11)	28.94 (98.00)
6th Gear									
191.42 (142.74)	27617 (122.85)	2.60 (4.18)	2087	8.62	0.491 (0.299)	14.26 (2.81)	183 (84)	54 (12)	28.91 (97.90)
7th Gear									
206.20 (153.76)	26415 (117.50)	2.93 (4.71)	2008	7.95	0.477 (0.290)	14.69 (2.89)	190 (88)	54 (12)	28.89 (97.83)
8th Gear									
219.65 (163.79)	25576 (113.77)	3.22 (5.18)	1900	7.19	0.466 (0.284)	15.02 (2.96)	202 (94)	55 (13)	28.88 (97.80)
9th Gear									
225.60 (168.23)	24551 (109.21)	3.45 (5.55)	1741	6.10	0.465 (0.283)	15.04 (2.96)	205 (96)	56 (13)	28.87 (97.77)
10th Gear									
231.18 (172.39)	21920 (97.51)	3.95 (6.36)	1701	4.33	0.458 (0.279)	15.28 (3.01)	201 (94)	56 (13)	28.86 (97.73)
11th Gear									
235.42 (175.55)	18916 (84.14)	4.67 (7.51)	1701	2.83	0.448 (0.273)	15.62 (3.08)	203 (95)	56 (13)	28.85 (97.70)
12th Gear									
238.14 (177.58)	16432 (73.10)	5.43 (8.75)	1702	1.92	0.445 (0.271)	15.73 (3.10)	200 (94)	57 (14)	28.84 (97.66)
13th Gear									
237.32 (176.97)	13798 (61.38)	6.45 (10.38)	1704	1.31	0.445 (0.271)	15.72 (3.10)	201 (94)	57 (14)	28.83 (97.63)
14th Gear									
231.36 (172.52)	10008 (44.52)	8.67 (13.95)	1701	0.81	0.458 (0.279)	15.29 (3.01)	200 (93)	58 (14)	28.82 (97.60)

