2008

Test 1941: John Deere 9330 Diesel

Nebraska Tractor Test Lab
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NEBRASKA OECD TRACTOR TEST 1941–SUMMARY 617
JOHN DEERE 9330 DIESEL
24 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—1108 rpm)					
332.97 *(248.29)*	2098	20.04 *(75.88)*	0.420 *(0.255)*	16.61 *(3.27)*	
Standard Power Take-off Speed—(PTO speed—1000 rpm)					
375.92 *(280.32)*	1895	21.90 *(82.90)*	0.406 *(0.247)*	17.16 *(3.38)*	
Maximum Power (1 hour)					
385.04 *(287.12)*	1800	22.38 *(84.70)*	0.405 *(0.247)*	17.21 *(3.39)*	
VARYING POWER AND FUEL CONSUMPTION					
332.97 *(248.29)*	2098	20.04 *(75.88)*	0.420 *(0.255)*	16.61 *(3.27)*	Air temperature
286.44 *(213.60)*	2124	18.13 *(68.63)*	0.442 *(0.269)*	15.80 *(3.11)*	78°F *(25°C)*
216.28 *(161.28)*	2137	15.22 *(57.62)*	0.491 *(0.299)*	14.21 *(2.80)*	Relative humidity
145.48 *(108.48)*	2154	11.76 *(44.52)*	0.564 *(0.343)*	12.37 *(2.44)*	59%
73.32 *(54.67)*	2171	8.44 *(31.95)*	0.803 *(0.489)*	8.69 *(1.71)*	Barometer
1.54 *(1.15)*	2186	6.05 *(22.91)*	27.456 *(16.701)*	0.25 *(0.05)*	28.73" Hg *(97.39 kPa)*

Maximum Torque - 1220 lb.-ft. *(1654 Nm)* at 1349 rpm
Maximum Torque Rise - 46.4%
Torque rise at 1700 engine rpm - 37%
Power increase at 1800 engine rpm - 15.6%

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)*	Fuel Consumption Hp.hr/gal *(kW.h/l)*	Temp.°F cool-ing med	*(°C)* Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Power—7th(B1Lo) Gear									
302.16 *(225.32)*	24641 *(109.61)*	4.60 *(7.40)*	2101	3.3	0.450 *(0.274)*	15.50 *(3.05)*	182 *(83)*	65 *(18)*	29.10 *(98.54)*
75% of Pull at Maximum Power—7th(B1Lo) Gear									
235.12 *(175.33)*	18464 *(82.13)*	4.78 *(7.69)*	2165	2.3	0.507 *(0.309)*	13.75 *(2.71)*	178 *(81)*	45 *(7)*	29.42 *(99.63)*
50% of Pull at Maximum Power—7th(B1Lo) Gear									
159.84 *(119.19)*	12333 *(54.86)*	4.86 *(7.82)*	2187	1.7	0.591 *(0.359)*	11.81 *(2.33)*	178 *(81)*	48 *(9)*	29.44 *(99.70)*
75% of Pull at Reduced Engine Speed—12th(C2Lo) Gear									
235.71 *(175.77)*	18416 *(81.92)*	4.80 *(7.72)*	1532	2.3	0.463 *(0.282)*	15.06 *(2.97)*	178 *(81)*	46 *(8)*	29.43 *(99.66)*
50% of Pull at Reduced Engine Speed—12th(C2Lo) Gear									
158.99 *(118.56)*	12280 *(54.62)*	4.86 *(7.81)*	1541	1.7	0.527 *(0.321)*	13.23 *(2.61)*	177 *(81)*	48 *(9)*	29.44 *(99.70)*

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

Dates of Tests: October 6 -November 5, 2008

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)*** 0.8380 **Fuel weight** 6.977 lbs/gal *(0.836 kg/l)* **Oil SAE** 15W-40 **API service classification** CH-4 **Transmission, hydraulic and final drive lubricant** John Deere Hy-Gard fluid **Total time engine was operated:** 29.0 hours

ENGINE: Make John Deere Diesel **Type** six cylinder vertical with turbocharger and air to air aftercooler **Serial No.** *RG6135L003244* **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 5.197" x 6.496" *(132.0 mm x 165.0 mm)* **Compression ratio** 16.0 to 1 **Displacement** 826 cu in *(13548 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 oil, radiator for transmission, front and rear axle oil **Fuel filter** two paper cartridges **Fuel cooler** radiator for returned fuel **Muffler** vertical **Cooling medium temperature control** 3 thermostats and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate: 130.5 - 141.1 lb/h *(59.2 - 64.0 kg/h)* **High idle:** 2215 - 2265 rpm (2160 - 2200 rpm with PTO engaged) **Turbo boost:** nominal 20.3 - 23.2 psi *(140 - 160 kPa)* as measured 21.9 psi *(151 kPa)*

CHASSIS: Type four wheel drive with duals **Serial No.** *RW9330H003373* **Tread width** rear 63.0" *(1600 mm)* to 135.8" *(3450 mm)*, front 63.0" *(1600 mm)* to 135.8" *(3450 mm)* **Wheelbase** 137.7" *(3498 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with 2 range operator controlled power shift **Nominal travel speeds mph *(km/h)*** first 2.21 *(3.55)* second 2.64 *(4.25)* third 2.83 *(4.56)* fourth 3.40 *(5.48)* fifth 3.88 *(6.25)* sixth 4.67 *(7.51)* seventh 4.70 *(7.57)* eighth 5.18 *(8.33)* ninth 5.64 *(9.08)* tenth 6.06 *(9.76)* eleventh 6.20 *(9.97)* twelfth 6.67 *(10.73)* thirteenth 7.27 *(11.70)* fourteenth 7.98 *(12.85)* fifteenth 8.28 *(13.32)* sixteenth 9.14 *(14.71)* seventeenth 9.95 *(16.01)* eighteenth 10.91 *(17.55)* nineteenth 11.01 *(17.72)* twentieth 13.19 *(21.22)* twenty-first 14.17 *(22.81)* twenty-second 16.93 *(27.24)* twenty-third 19.55 *(31.46)* twenty-fourth 23.14 *(37.24)* reverse 2.64 *(4.25)*, 3.17 *(5.10)*, 5.65 *(9.09)*, 6.20 *(9.97)*, 6.75 *(10.86)*, 7.46 *(12.01)*

DRAWBAR PERFORMANCE

(Unballasted at 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)*	Hp.hr/gal *(kW.h/l)*	Temp.°F *(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
				3rd(A2Lo) Gear					
263.71 *(196.65)*	36769 *(163.55)*	2.69 *(4.33)*	2155	9.4	0.491 *(0.298)*	14.22 *(2.80)*	179 *(82)*	47 *(8)*	29.10 *(98.54)*
				4th (A2Hi) Gear					
290.94 *(216.96)*	33511 *(149.06)*	3.26 *(5.24)*	2101	6.8	0.468 *(0.285)*	14.91 *(2.94)*	179 *(82)*	47 *(8)*	29.09 *(98.51)*
				5th (A3Lo) Gear					
297.86 *(222.11)*	29869 *(132.86)*	3.74 *(6.02)*	2102	6.1	0.457 *(0.278)*	15.25 *(3.00)*	184 *(84)*	67 *(19)*	29.10 *(98.54)*
				6th (A3Hi) Gear					
296.47 *(221.08)*	24419 *(108.62)*	4.55 *(7.33)*	2099	3.3	0.459 *(0.279)*	15.20 *(2.99)*	182 *(83)*	66 *(19)*	29.10 *(98.54)*
				7th (B1Lo) Gear					
302.16 *(225.32)*	24641 *(109.61)*	4.60 *(7.40)*	2101	3.3	0.450 *(0.274)*	15.50 *(3.05)*	182 *(83)*	65 *(18)*	29.10 *(98.54)*
				8th (C1Lo) Gear					
301.46 *(224.80)*	22242 *(98.94)*	5.08 *(8.18)*	2098	2.8	0.451 *(0.275)*	15.46 *(3.05)*	180 *(82)*	64 *(18)*	29.10 *(98.54)*
				9th(B1Hi) Gear					
302.78 *(225.78)*	20393 *(90.71)*	5.57 *(8.96)*	2100	2.6	0.449 *(0.273)*	15.55 *(3.06)*	181 *(83)*	63 *(17)*	29.10 *(98.54)*
				10th(B2Lo) Gear					
303.45 *(226.28)*	19056 *(84.77)*	5.97 *(9.61)*	2100	2.5	0.448 *(0.272)*	15.58 *(3.07)*	181 *(83)*	62 *(17)*	29.10 *(98.54)*
				11th(C1Hi) Gear					
297.57 *(221.90)*	18134 *(80.66)*	6.15 *(9.90)*	2098	2.3	0.459 *(0.279)*	15.21 *(3.00)*	180 *(82)*	61 *(16)*	29.10 *(98.54)*
				12th(C2Lo) Gear					
298.72 *(222.75)*	16923 *(75.28)*	6.62 *(10.65)*	2099	2.1	0.457 *(0.278)*	15.25 *(3.00)*	181 *(83)*	67 *(19)*	29.10 *(98.54)*
				13th(B2Hi) Gear					
291.48 *(217.36)*	15189 *(67.56)*	7.20 *(11.58)*	2099	1.9	0.471 *(0.286)*	14.83 *(2.92)*	182 *(83)*	66 *(19)*	29.10 *(98.54)*
				14th(C2Hi) Gear					
287.91 *(214.70)*	13582 *(60.41)*	7.95 *(12.79)*	2100	1.8	0.475 *(0.289)*	14.68 *(2.89)*	178 *(81)*	49 *(9)*	29.06 *(98.41)*
				15th(B3Lo) Gear					
285.97 *(213.24)*	13034 *(57.98)*	8.23 *(13.24)*	2103	1.7	0.479 *(0.291)*	14.58 *(2.87)*	179 *(82)*	49 *(9)*	29.06 *(98.41)*

TRACTOR SOUND LEVEL WITH CAB	dB(A)
At no load in 6th(A3Hi) gear	73.9
Transport speed - no load - 24th(D3Hi) gear	75.8
Bystander in 24th(D3Hi) gear	88.5

TIRES, BALLAST AND WEIGHT	Tested Without Ballast
Rear Tires - No., size, ply & psi*(kPa)*	Four 620/70R46;***;8*(55)*
Front Tires - No., size, ply & psi*(kPa)*	Four 620/70R46;***;11*(75)*
Height of Drawbar	23.0 in *(585 mm)*
Static Weight with operator - Rear	15240 lb *(6913 kg)*
- Front	22050 lb*(10002 kg)*
- Total	37290 lb*(16915 kg)*

Clutch wet multiple disc hydraulically actuated by foot pedal **Brakes** wet multiple disc hydraulically actuated foot pedal **Steering** hydrostatic and articulated **Power take-off** 1000 rpm at 1895 engine rpm **Unladen tractor mass** 37115 lb *(16835 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 primary fuel filter was maintained at 102°F *(39°C)*. The drawbar pull in 3rd(A2Lo) gear was limited to avoid excessive tractor bouncing. 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. **1941**, Nebraska Summary 617, January 12, 2009.

Roger M. Hoy
Director

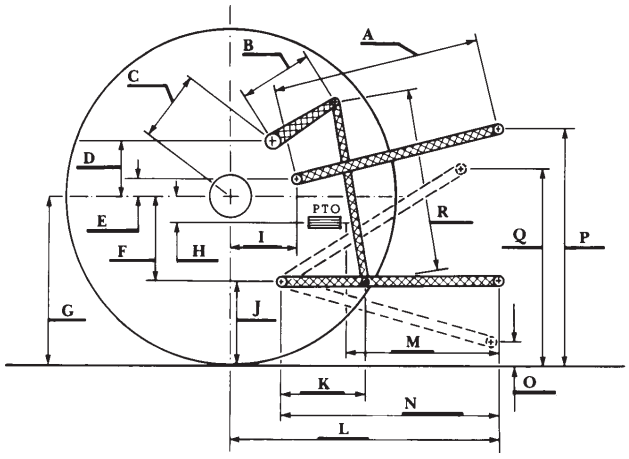
M.F. Kocher
V.I. Adamchuk
J.A. Smith
Board of Tractor Test Engineers

DRAWBAR PERFORMANCE
(Unballasted at 1800 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)*	Hp.hr/gal *(kW.h/l)*	Temp.°F(°C) cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
				3rd(A2Lo) Gear					
265.75 *(198.17)*	36887 *(164.08)*	2.70 *(4.35)*	2155	9.2	0.488 *(0.297)*	14.30 *(2.82)*	179 *(81)*	47 *(8)*	29.10 *(98.54)*
				4th(A2Hi) Gear					
297.65 *(221.96)*	35652 *(158.59)*	3.13 *(5.04)*	2062	8.6	0.468 *(0.285)*	14.90 *(2.94)*	179 *(82)*	48 *(9)*	29.09 *(98.51)*
				5th(A3Lo) Gear					
319.02 *(237.89)*	34388 *(152.97)*	3.48 *(5.60)*	1979	7.5	0.452 *(0.275)*	15.44 *(3.04)*	179 *(82)*	48 *(9)*	29.08 *(98.48)*
				6th(A3Hi) Gear					
334.78 *(249.64)*	32641 *(145.19)*	3.85 *(6.19)*	1844	6.9	0.451 *(0.275)*	15.46 *(3.05)*	192 *(89)*	66 *(19)*	29.10 *(98.54)*
				7th(B1Lo) Gear					
339.48 *(253.15)*	32531 *(144.71)*	3.91 *(6.30)*	1844	6.2	0.442 *(0.269)*	15.77 *(3.11)*	187 *(86)*	66 *(19)*	29.10 *(98.54)*
				8th (C1Lo) Gear					
344.93 *(257.21)*	30217 *(134.41)*	4.28 *(6.89)*	1801	4.6	0.440 *(0.268)*	15.84 *(3.12)*	189 *(87)*	65 *(18)*	29.10 *(98.54)*
				9th (B1Hi) Gear					
344.80 *(257.12)*	27504 *(122.34)*	4.70 *(7.57)*	1802	4.0	0.438 *(0.267)*	15.91 *(3.13)*	190 *(88)*	64 *(18)*	29.10 *(98.54)*
				10th(B2Lo) Gear					
345.32 *(257.51)*	25558 *(113.69)*	5.07 *(8.15)*	1800	3.4	0.438 *(0.267)*	15.91 *(3.13)*	189 *(87)*	62 *(17)*	29.10 *(98.54)*
				11th (C1Hi) Gear					
343.58 *(256.21)*	24666 *(109.72)*	5.22 *(8.41)*	1801	3.1	0.440 *(0.268)*	15.86 *(3.12)*	189 *(87)*	62 *(17)*	29.10 *(98.54)*
				12th(C2Lo) Gear					
350.60 *(261.44)*	23337 *(103.81)*	5.63 *(9.07)*	1805	3.0	0.434 *(0.264)*	16.06 *(3.16)*	191 *(88)*	66 *(19)*	29.10 *(98.54)*
				13th(B2Hi) Gear					
344.36 *(256.79)*	21091 *(93.82)*	6.12 *(9.85)*	1802	2.9	0.441 *(0.268)*	15.81 *(3.11)*	194 *(90)*	66 *(19)*	29.10 *(98.54)*
				14th(C2Hi) Gear					
336.12 *(250.64)*	18630 *(82.87)*	6.77 *(10.89)*	1801	2.7	0.451 *(0.274)*	15.48 *(3.05)*	186 *(85)*	49 *(9)*	29.07 *(98.44)*
				15th(B3Lo) Gear					
337.97 *(252.02)*	18046 *(80.27)*	7.02 *(11.30)*	1802	2.5	0.445 *(0.271)*	15.66 *(3.09)*	184 *(84)*	49 *(9)*	29.06 *(98.41)*
				16th(C3Lo) Gear					
332.29 *(247.79)*	16078 *(71.52)*	7.75 *(12.47)*	1801	2.3	0.453 *(0.276)*	15.40 *(3.03)*	183 *(84)*	49 *(9)*	29.06 *(98.41)*
				17th(B3Hi) Gear					
326.32 *(243.34)*	14523 *(64.60)*	8.43 *(13.56)*	1800	2.0	0.464 *(0.282)*	15.05 *(2.97)*	183 *(84)*	49 *(9)*	29.05 *(98.37)*

HYDRAULIC PERFORMANCE

CATEGORY: III, IVN		
Quick Attach: yes		
OECD Static test		
Maximum force exerted through whole range:	15712 lbs *(69.9 kN)*(Cat III)	
	15677 lbs *(69.7 kN)*(Cat IVN)	
i) Sustained pressure at compensator cutoff:	2990 psi *(206 bar)*	
	24 speed manual shift transmission	
	Single outlet set	**Three outlet sets combined**
ii) Pump delivery rate at minimum pressure and rated engine speed:	38.5 GPM *(145.6 l/min)*	46.2 GPM *(174.8 l/min)*
iii)Pump delivery rate at maximum hydraulic power:	35.9 GPM *(135.9 l/min)*	44.2 GPM *(167.3 l/min)*
Delivery pressure:	2234 psi *(154 bar)*	2606 psi *(180 bar)*
Power:	46.8 HP *(34.9 kW)*	67.2 HP *(50.1 kW)*
	18 speed Powershift Transmission	
	Single outlet set	**Three outlet sets combined**
ii) Pump delivery rate at minimum pressure and rated engine speed:	37.7 GPM *(142.6 l/min)*	51.1 GPM *(193.4 l/min)*
iii)Pump delivery rate at maximum hydraulic power:	35.3 GPM *(133.7 l/min)*	49.4 GPM *(187.0 l/min)*
Delivery pressure:	2039 psi *(141 bar)*	2542 psi *(175 bar)*
Power:	42.0 HP *(31.3 kW)*	73.2 HP *(54.6 kW)*



HITCH DIMENSIONS AS TESTED—NO LOAD

	Category III		Category IVN	
	inch	*mm*	inch	*mm*
A	30.7	*780*	30.9	*785*
B	18.6	*472*	18.6	*472*
C	26.2	*666*	26.2	*666*
D	24.4	*620*	24.4	*620*
E	11.3	*288*	11.3	*288*
F	13.8	*350*	13.8	*350*
G	36.2	*920*	36.2	*920*
H	4.0	*101*	4.0	*101*
I	22.7	*577*	22.7	*577*
J	22.4	*570*	22.4	*570*
K	28.8	*731*	28.3	*718*
L	55.3	*1405*	54.5	*1385*
*L'	61.3	*1557*	61.8	*1570*
M	31.4	*797*	31.9	*810*
N	44.0	*1117*	43.2	*1097*
O	9.0	*230*	9.0	*230*
P	49.4	*1255*	49.4	*1256*
Q	41.3	*1050*	41.5	*1053*
R	43.7	*1110*	43.7	*1110*

*L' to Quick Attach ends

JOHN DEERE 9330 DIESEL

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