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January 1995

Test 1689: John Deere 8200 Diesel 16-Speed

Nebraska Tractor Test Lab

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NEBRASKA OECD TRACTOR TEST 1689—SUMMARY 175

JOHN DEERE 8200 DIESEL

16 SPEED

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

Dates of Test: April 24 to May 12, 1995

Manufacturer: John Deere Tractor Works, P.O.
Box 270, Waterloo, Iowa 50704

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—1009 rpm)					
181.71 (135.50)	2199	10.38 (39.30)	0.398 (0.242)	17.50 (3.45)	
Maximum Power (2 hours)					
202.33 (150.88)	2000	10.92 (41.35)	0.376 (0.229)	18.52 (3.65)	

VARYING POWER AND FUEL CONSUMPTION

181.71 (135.50)	2199	10.38 (39.30)	0.398 (0.242)	17.50 (3.45)	Air temperature
158.07 (117.87)	2256	9.34 (35.35)	0.412 (0.251)	16.93 (3.33)	75°F (24°C)
118.80 (88.59)	2267	7.62 (28.83)	0.447 (0.272)	15.60 (3.07)	Relative humidity
79.54 (59.31)	2277	5.85 (22.15)	0.513 (0.312)	13.59 (2.68)	26%
39.93 (29.77)	2286	4.17 (15.80)	0.729 (0.443)	9.57 (1.88)	Barometer
0.50 (0.37)	2295	2.50 (9.45)	34.731 (21.126)	0.20 (0.04)	28.93"Hg (97.97 kPa)

Maximum Torque 626 lb.-ft. (848 Nm) at 1400 rpm
Maximum Torque Rise 44.2%
Torque rise at 1802 engine rpm 29%

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)
Maximum Power—8th Gear									
159.63 (119.04)	12489 (55.55)	4.79 (7.71)	2197	4.23	0.450 (0.274)	15.48 (3.05)	200 (93)	66 (19)	28.40 (96.17)
75% of Pull at Maximum Power—8th Gear									
125.18 (93.35)	9371 (41.68)	5.01 (8.06)	2260	2.82	0.478 (0.290)	14.60 (2.88)	197 (91)	67 (19)	28.41 (96.21)
50% of Pull at Maximum Power—8th Gear									
84.53 (63.04)	6244 (27.77)	5.08 (8.17)	2267	1.73	0.539 (0.328)	12.93 (2.55)	187 (86)	67 (19)	28.41 (96.21)
75% of Pull at Reduced Engine Speed—10th Gear									
125.22 (93.37)	9365 (41.66)	5.01 (8.07)	1778	2.73	0.427 (0.260)	16.32 (3.22)	192 (89)	67 (19)	28.41 (96.21)
50% of Pull at Reduced Engine Speed—10th Gear									
84.30 (62.86)	6239 (27.75)	5.07 (8.15)	1778	1.73	0.467 (0.284)	14.95 (2.94)	188 (86)	67 (19)	28.41 (96.21)

FUEL OIL and TIME: Fuel No. 2 Diesel
Cetane No. 50.6 Specific gravity converted to
60°/60° F (15°/15°C) 0.8374 Fuel weight 6.972
lbs/gal (0.836 kg/l) Oil SAE 15W-40 API service
classification CD, CE, CF-4 To motor 5.065 gal
(19.174 l) Drained from motor 4.933 gal (18.675 l)
Transmission and hydraulic lubricant John
Deere Hy-Gard fluid **Front axle lubricant** John
Deere GL-5 Gear Lubricant **Total time engine
was operated** 28.5 hours.

ENGINE: Make John Deere Diesel **Type** six
cylinder vertical with turbocharger and air to air
intercooler **Serial No.** *RG6076H543008*
Crankshaft lengthwise **Rated engine speed** 2200
Bore and stroke (as specified) 4.56" × 4.75" (115.8
mm × 120.7 mm) **Compression ratio** 15.0 to 1
Displacement 466 cu in (7627 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 return fuel
Muffler vertical **Cooling medium temperature
control** two thermostats and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel
rate: 69.9-77.4 lb/h (31.7-35.1 kg/h) **High idle:**
2275-2325 rpm **Turbo boost** nominal 18.4-22.5 psi
(127-155 kPa) as measured 20.5 psi (141 kPa)

CHASSIS: **Type** front wheel assist **Serial No.**
RW8200P 001553 **Tread width** rear 60.0" (1524
mm) to 108.3" (2752 mm) front 60.0" (1524 mm) to
88.0" (2235 mm) **Wheel base** 116.1" (2950 mm)
Hydraulic control system direct engine drive
Transmission selective gear fixed ratio with full
range operator controlled powershift **Nominal travel
speeds mph (km/h)** first 1.35 (2.18) second 1.73
(2.79) third 2.21 (3.55) fourth 2.81 (4.53) fifth 3.41
(5.49) sixth 3.85 (6.19) seventh 4.36 (7.01) eighth
4.92 (7.91) ninth 5.54 (8.92) tenth 6.26 (10.07)
eleventh 7.08 (11.40) twelfth 7.99 (12.86) thirteenth
10.17 (16.36) fourteenth 12.99 (20.91) fifteenth 16.53
(26.61) sixteenth 21.13 (34.01) reverse 1.18 (1.90),
2.98 (4.79), 3.36 (5.40), 6.45 (10.38) 1600 engine
rpm **Clutch** multiple wet disc hydraulically actuated
by foot pedal **Brakes** wet multiple disc hydraulically
actuated by two foot pedals which can be locked
together **Steering** hydrostatic **Power take-off** 1000
rpm at 2180 engine rpm **Unladen tractor mass**
18928 lb (8586 kg)

**DRAWBAR PERFORMANCE AT 2000 RPM
(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 Gear									
129.23 (96.37)	19089 (84.91)	2.54 (4.09)	2254	13.43	0.516 (0.314)	13.53 (2.67)	189 (87)	51 (11)	28.76 (97.39)
5th Gear									
148.36 (110.64)	17688 (78.68)	3.15 (5.06)	2230	10.72	0.484 (0.294)	14.42 (2.84)	199 (93)	65 (18)	28.40 (96.17)
6th Gear									
156.71 (116.86)	17117 (76.14)	3.43 (5.53)	2138	9.88	0.468 (0.285)	14.88 (2.93)	199 (93)	65 (18)	28.40 (96.17)
7th Gear									
169.97 (126.75)	17030 (75.75)	3.74 (6.02)	2039	8.95	0.448 (0.272)	15.58 (3.07)	198 (92)	66 (19)	28.39 (97.14)
8th Gear									
175.41 (130.80)	15427 (68.62)	4.26 (6.86)	1999	6.28	0.434 (0.264)	16.07 (3.17)	205 (96)	66 (19)	28.39 (96.14)
9th Gear									
176.49 (131.61)	13551 (60.28)	4.88 (7.86)	1998	4.84	0.430 (0.261)	16.23 (3.20)	202 (94)	66 (19)	28.40 (96.17)
10th Gear									
178.00 (132.73)	11989 (53.33)	5.57 (8.96)	1998	3.88	0.424 (0.258)	16.43 (3.24)	200 (93)	67 (19)	28.41 (96.21)
11th Gear									
177.42 (132.30)	10489 (46.66)	6.34 (10.21)	1996	3.09	0.427 (0.260)	16.34 (3.22)	204 (95)	67 (19)	28.41 (96.21)
12th Gear									
176.70 (131.76)	9230 (41.06)	7.18 (11.55)	1992	2.64	0.427 (0.260)	16.33 (3.22)	206 (97)	67 (19)	28.41 (96.21)
13th Gear									
175.23 (130.67)	7124 (31.69)	9.22 (14.85)	1996	2.00	0.431 (0.262)	16.18 (3.19)	204 (95)	67 (19)	28.41 (96.21)

TRACTOR SOUND LEVEL WITH CAB

dB(A)

Maximum sound level in 12th gear	74.5
Transport sound level in 16th gear	77.5
Bystander in 16th gear	90.5

TIRES, BALLAST AND WEIGHT

		With Ballast	Without Ballast
Rear Tires	No., size, ply & psi (kPa)	Four 20.8R42; **, 7 (50)	Two 20.8R42; **, 13 (90)
Ballast	Duals (total)	1972 lb (894 kg)	None
	Test Equip. (total)	1480 lb (671 kg)	None
Front Tires	No., size, ply & psi (kPa)	Two 16.9R30; **, 22 (150)	Two 16.9R30; **, 17 (120)
Ballast	Liquid (total)	None	None
	—Cast Iron (total)	1124 lb (510 kg)	None
Height of Drawbar		20.5 in (520 mm)	20.5 in (520 mm)
Static Weight with Operator	Rear	14340 lb (6504 kg)	11418 lb (5179 kg)
	Front	9330 lb (4232 kg)	7676 lb (3482 kg)
	Total	23670 lb (10736 kg)	19094 lb (8661 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. The pull in 3rd gear (ballasted tractor) was limited to avoid excessive tractor bouncing. For the maximum power tests, the fuel temperature at the injection pump return was maintained at 168°F (76°C). The performance results on this summary were taken from OECD tests conducted under the Code II Restricted Standard Test Code procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1689**, Summary 175, July 12, 1995.

LOUIS I. LEVITICUS

Enginner-in-Charge

L.L. BASHFORD

R.D. GRISSO

M. F. KOCHER

Board of Tractor Test Engineers

**DRAWBAR PERFORMANCE AT 2000 RPM
(Ballasted—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)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
3rd Gear								
129.98 (96.92)	23474 (104.42)	2.08 (3.34)	2251	9.55	0.497 (0.302)	14.03 (2.76)	188 (86)	54 (12) 28.99 (98.17)
4th Gear								
154.59 (115.28)	22673 (100.85)	2.56 (4.12)	2160	9.08	0.472 (0.287)	14.76 (2.91)	197 (91)	54 (12) 28.99 (98.17)
5th Gear								
175.01 (130.50)	21951 (97.64)	2.99 (4.81)	2036	6.75	0.434 (0.264)	16.07 (3.17)	200 (93)	52 (11) 28.92 (97.93)
6th Gear								
177.71 (132.52)	19696 (87.61)	3.38 (5.45)	2001	4.90	0.427 (0.260)	16.32 (3.21)	195 (90)	54 (12) 28.93 (97.97)
7th Gear								
180.80 (134.83)	17486 (77.78)	3.88 (6.24)	2003	3.86	0.419 (0.255)	16.64 (3.28)	203 (95)	57 (14) 28.93 (97.97)
8th Gear								
180.52 (134.61)	15383 (68.43)	4.40 (7.08)	2001	3.34	0.420 (0.255)	16.62 (3.27)	204 (95)	55 (13) 28.93 (97.97)
9th Gear								
179.94 (134.18)	13547 (60.26)	4.98 (8.02)	1996	2.62	0.419 (0.255)	16.62 (3.27)	202 (94)	57 (14) 28.93 (97.97)
10th Gear								
179.94 (134.18)	11949 (53.15)	5.65 (9.09)	1999	2.35	0.419 (0.255)	16.63 (3.28)	208 (98)	57 (14) 28.93 (97.97)
11th Gear								
178.36 (133.00)	10436 (46.42)	6.41 (10.31)	1998	2.17	0.425 (0.259)	16.40 (3.23)	203 (95)	57 (14) 28.91 (97.90)
12th Gear								
177.16 (132.11)	9153 (40.71)	7.26 (11.68)	1999	1.81	0.428 (0.261)	16.28 (3.21)	202 (94)	57 (14) 28.91 (97.90)
13th Gear								
172.38 (128.54)	6976 (31.03)	9.27 (14.91)	1998	1.44	0.437 (0.266)	15.95 (3.14)	201 (94)	57 (14) 28.91 (97.90)

**DRAWBAR PERFORMANCE AT 2200 RPM
(Ballasted—Front Drive Engaged)
MAXIMUM POWER IN SELECTED GEARS**

3rd Gear								
127.73 (95.25)	23207 (103.23)	2.06 (3.32)	2251	9.93	0.503 (0.306)	13.87 (2.73)	190 (88)	54 (12) 28.99 (98.17)
4th Gear								
153.67 (114.59)	21636 (96.24)	2.66 (4.29)	2200	7.00	0.469 (0.286)	14.85 (2.93)	188 (87)	54 (12) 28.99 (98.17)
5th Gear								
161.99 (120.79)	18242 (81.14)	3.33 (5.36)	2198	3.86	0.444 (0.270)	15.70 (3.09)	189 (87)	51 (11) 28.92 (97.93)
6th Gear								
161.44 (120.39)	16019 (71.25)	3.78 (6.08)	2199	3.34	0.446 (0.271)	15.62 (3.08)	190 (88)	53 (12) 28.92 (97.93)
7th Gear								
163.03 (121.57)	14221 (63.26)	4.30 (6.92)	2198	2.98	0.443 (0.269)	15.75 (3.10)	196 (91)	55 (13) 28.93 (97.97)
8th Gear								
160.61 (119.76)	12334 (54.86)	4.88 (7.86)	2203	2.62	0.448 (0.272)	15.57 (3.07)	202 (94)	56 (13) 28.93 (97.97)
9th Gear								
160.17 (119.44)	10880 (48.40)	5.52 (8.88)	2200	2.17	0.448 (0.272)	15.57 (3.07)	201 (94)	57 (14) 28.93 (97.97)
10th Gear								
160.00 (119.31)	9635 (42.85)	6.23 (10.02)	2194	1.90	0.452 (0.275)	15.42 (3.04)	202 (94)	57 (14) 28.92 (97.93)
11th Gear								
157.03 (117.10)	8317 (37.00)	7.08 (11.39)	2197	1.62	0.457 (0.278)	15.25 (3.00)	199 (93)	57 (14) 28.91 (97.90)
12th Gear								
154.82 (115.45)	7236 (32.19)	8.02 (12.91)	2199	1.35	0.465 (0.283)	14.99 (2.95)	197 (92)	57 (14) 28.91 (97.90)

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: III

Quick Attach: yes

Maximum Force Exerted Through Whole Range: 9617 lbs (42.8 kN)
13622 lbs (60.6 kN) (with cylinders (1) 90 mm & (1) 100 mm)

- i) Opening pressure of relief valve: NA
Sustained pressure with pump stalled: 2920 psi (201 bar)
ii) Pump delivery rate at minimum pressure: 30.5 GPM (115.5 l/min)
iii) Pump delivery rate at maximum
hydraulic power: 27.8 GPM (105.2 l/min)
Delivery pressure: 2670 psi (184 bar)
Power: 43.3 HP (32.3 kW)

THREE POINT LIFT PERFORMANCE

Observed Maximum Pressure psi (bar) 2920 (201)
Location remote outlet
Hydraulic oil Temperature °F (°C) 150 (65)
Location pump inlet
Category III
Quick Attach yes

As per current SAE test procedures

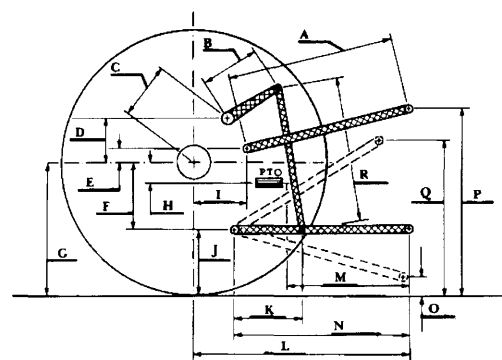
with lift cylinders (1) 80 mm and (1) 90 mm					
Hitch point distance to ground level in. (mm)	8.0 (203)	16.0 (406)	24.0 (610)	32.0 (813)	40.0 (1016)
Lift force on frame lb.	10967	10611	10647	10440	9599
" " " " (kN)	(48.8)	(47.2)	(47.4)	(46.4)	(42.7)

with lift cylinders (1) 90 mm and (1) 100 mm					
Hitch point distance to ground level in. (mm)	8.0 (203)	16.0 (406)	24.0 (610)	32.0 (813)	40.0 (1016)
Lift force on frame lb.	15413	14990	14990	14621	13689
" " " " (kN)	(68.6)	(66.7)	(66.7)	(65.0)	(60.9)

As per current ASAE test procedures

with lift cylinders (1) 80 mm and (1) 90 mm					
Hitch point distance to ground level in. (mm)	8.0 (203)	16.0 (406)	24.0 (610)	32.0 (813)	40.0 (1016)
Lift force on frame lb.	12020	11694	11733	11474	10518
" " " " (kN)	(53.5)	(52.0)	(52.2)	(51.0)	(46.8)

with lift cylinders (1) 90 mm and (1) 100 mm					
Hitch point distance to ground level in. (mm)	8.0 (203)	16.0 (406)	24.0 (610)	32.0 (813)	40.0 (1016)
Lift force on frame lb.	16922	16458	16458	16132	15011
" " " " (kN)	(75.3)	(73.2)	(73.2)	(71.8)	(66.8)



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	28.3	718
B	19.5	495
C	21.7	550
D	19.5	495
E	4.8	123
F	13.8	350
G	35.6	905
H	7.8	197
I	20.3	515
J	21.8	555
K	28.2	716
L	48.9	1242
*L'	52.4	1331
M	22.0	558
N	38.1	967
O	9.0	229
P	43.8	1114
Q	40.1	1019
R	41.5	1054

*L' to end of Quick Attach



JOHN DEERE 8200 DIESEL

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska-Lincoln
Darrell Nelson, Dean and Director

SUPPLEMENT TO NEBRASKA OECD TRACTOR TEST 1689—SUMMARY 175
JOHN DEERE 8200 DIESEL
16 SPEED
CHASSIS SERIAL NUMBERS *RW8200P010001* AND HIGHER

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
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MAXIMUM POWER AND FUEL CONSUMPTION

Rated Engine Speed—(PTO speed—1008 rpm)					
183.71 (136.99)	2200	10.37 (39.26)	0.396 (0.241)	17.71 (3.49)	
Maximum Power (2 hours)					
206.36 (153.88)	2000	10.89 (41.23)	0.370 (0.225)	18.95 (3.73)	

VARYING POWER AND FUEL CONSUMPTION

183.71 (136.99)	2200	10.37 (39.26)	0.396 (0.241)	17.71 (3.49)	Air temperature
159.19 (118.70)	2246	9.50 (35.95)	0.418 (0.254)	16.76 (3.30)	80°F (26°C)
120.21 (89.64)	2258	7.70 (29.15)	0.449 (0.273)	15.61 (3.07)	Relative humidity
80.69 (60.17)	2270	6.03 (22.84)	0.524 (0.319)	13.38 (2.63)	44%
40.33 (30.07)	2282	4.36 (16.52)	0.759 (0.462)	9.24 (1.82)	Barometer
1.00 (0.75)	2291	2.61 (9.88)	18.307 (11.136)	0.38 (0.08)	28.80" Hg (97.53 kPa)

Maximum Torque 618 lb.-ft. (838 Nm) at 1400 rpm
Maximum Torque Rise 41.0%
Torque rise at 1800 engine rpm 31%

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

Dates of Test: September 25, 1996

Manufacturer: John Deere Tractor Works, P.O.
Box 270, Waterloo, Iowa 50704

ENGINE: Make John Deere Diesel **Type** six cylinder vertical with turbocharger and air to air intercooler **Serial No.** *RG6081H007362* **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** (as specified) 4.56" × 5.06" (115.8 mm × 128.5 mm) **Compression ratio** 16.5 to 1 **Displacement** 495 cu in (8120 ml)

CHASSIS: Type front wheel assist **Serial No.** *RW8200P 010071*

NOTE : The performance figures presented here apply to tractor chassis serial numbers *RW8200P010001* and higher.

We, the undersigned, certify that this is a true and correct supplement to official Tractor Test No. **1689**, Summary 175, October 15, 1996.

LOUIS I. LEVITICUS

Engineer-in-Charge

L.L. BASHFORD
R.D. GRISSO
M. F. KOCHER
Board of Tractor Test Engineers