

# NEBRASKA OECD TRACTOR TEST 1969—SUMMARY 730

## JOHN DEERE 8295R DIESEL

### 16 SPEED

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

**Dates of tests:** April 22 - May 26, 2010

**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) 0.8433 Fuel weight 7.022 lbs/gal (0.842 kg/l) Oil SAE 15W-40 API service classification CI-4 Transmission and hydraulic lubricant John Deere Hy-Gard fluid Front axle lubricant John Deere Hy-Gard fluid Total time engine was operated: 29.5 hours

**ENGINE:** Make John Deere Diesel Type six cylinder vertical with turbocharger and air to air aftercooler Serial No.\*RG6090L070253\* 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 water separator Fuel cooler radiator for pump return fuel Muffler vertical Cooling medium temperature control 2 thermostats and variable speed fan

**ENGINE OPERATING PARAMETERS:** Fuel rate: 90.0 - 97.2 lb/h (40.8 - 44.1 kg/h) High idle: 2175 - 2225 rpm Turbo boost: nominal 25.4 - 29.7 psi (175 - 205 kPa) as measured 26.8 psi (185 kPa)

**CHASSIS:** Type front wheel assist Serial No.\*1RW8295RC9P003230\* Tread width rear 60.0" (1524 mm) to 132.5" (3368 mm) front 60.0" (1524 mm) to 88.0" (2235 mm) Wheelbase 118.9" (3020 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 1.12 (1.81) second 1.51 (2.43) third 2.01 (3.24) fourth 2.69 (4.33) fifth 3.02 (4.86) sixth 3.48 (5.60) seventh 4.05 (6.51) eighth 4.66 (7.50) ninth 5.39 (8.67) tenth 6.21 (9.99) eleventh 7.21 (11.61) twelfth 8.31 (13.38) thirteenth 9.80 (15.77) fourteenth 13.12 (21.12) fifteenth 17.47 (28.12) sixteenth 23.41 (37.67) reverse 1.06 (1.70), 2.83 (4.55), 3.57 (5.74), 6.55 (10.54)@1500 engine rpm Clutch wet multiple disc hydraulically actuated by foot pedal Brakes wet multiple disc hydraulically operated by two foot pedals that can be locked together Steering hydrostatic Power take-off 1000 rpm at 2004 engine rpm Unladen tractor mass 25570 lb (11598 kg)

#### 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—1048 rpm)</b>					
250.71 (186.95)	2100	13.20 (49.96)	0.370 (0.225)	19.00 (3.74)	
<b>Standard Power Take-off Speed(1000 rpm)</b>					
272.77 (203.41)	2004	14.24 (53.91)	0.367 (0.223)	19.15 (3.77)	
<b>Maximum Power (1 hour)</b>					
281.46 (209.89)	1749	14.77 (55.91)	0.368 (0.224)	19.06 (3.75)	

#### VARYING POWER AND FUEL CONSUMPTION

250.71 (186.95)	2100	13.20 (49.96)	0.370 (0.225)	19.00 (3.74)	Air temperature
218.69 (163.08)	2153	12.00 (45.43)	0.385 (0.234)	18.22 (3.59)	74°F (23°C)
164.98 (123.02)	2165	9.94 (37.65)	0.423 (0.257)	16.59 (3.27)	Relative humidity
110.60 (82.47)	2176	7.42 (28.08)	0.471 (0.286)	14.91 (2.94)	44%
55.63 (41.48)	2186	5.57 (21.08)	0.703 (0.428)	9.99 (1.97)	Barometer
1.56 (1.17)	2197	3.60 (13.63)	16.181 (9.843)	0.43 (0.09)	28.61" Hg (96.88 kPa)

Maximum torque - 922 lb.-ft. (1250 Nm) at 1501 rpm

Maximum torque rise - 47.1%

Torque rise at 1698 engine rpm - 39%

Power increase at 1749 rpm - 12.3%

#### 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) cooling med	Air dry bulb	Barom. inch Hg (kPa)
<b>Maximum Power—8th Gear</b>									
222.05 (165.58)	17989 (80.02)	4.63 (7.45)	2098	4.2	0.419 (0.255)	16.77 (3.30)	184 (84)	49 (9)	28.73 (97.29)
<b>75% of Pull at Maximum Power—8th Gear</b>									
173.28 (129.21)	13496 (60.03)	4.82 (7.76)	2156	3.0	0.455 (0.277)	15.45 (3.04)	179 (82)	52 (11)	28.71 (97.22)
<b>50% of Pull at Maximum Power—8th Gear</b>									
117.21 (87.40)	9006 (40.06)	4.88 (7.85)	2167	2.1	0.532 (0.323)	13.21 (2.60)	170 (76)	52 (11)	28.71 (97.22)
<b>75% of Pull at Reduced Engine Speed—11th Gear</b>									
173.68 (129.51)	13432 (59.75)	4.85 (7.81)	1402	2.8	0.393 (0.239)	17.87 (3.52)	186 (86)	52 (11)	28.71 (97.22)
<b>50% of Pull at Reduced Engine Speed—11th Gear</b>									
117.63 (87.72)	8948 (39.80)	4.93 (7.93)	1414	2.0	0.422 (0.257)	16.67 (3.28)	177 (81)	52 (11)	28.71 (97.22)

**DRAWBAR PERFORMANCE**  
**UNBALLASTED - FRONT DRIVE ENGAGED - 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)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)	
5th Gear									
184.75 (137.77)	24556 (109.23)	2.82 (4.54)	2150	12.2	0.473 (0.288)	14.88 (2.93)	179 (82)	48 (9)	28.73 (97.29)
6th Gear									
212.02 (158.10)	24144 (107.40)	3.30 (5.30)	2103	9.0	0.438 (0.267)	16.03 (3.16)	183 (84)	51 (11)	28.72 (97.26)
7th Gear									
219.42 (163.62)	20752 (92.31)	3.97 (6.38)	2098	5.5	0.422 (0.257)	16.65 (3.28)	187 (86)	51 (11)	28.72 (97.26)
8th Gear									
222.05 (165.58)	17989 (80.02)	4.63 (7.45)	2098	4.2	0.419 (0.255)	16.77 (3.30)	184 (84)	49 (9)	28.73 (97.29)
9th Gear									
220.71 (164.58)	15353 (68.29)	5.39 (8.67)	2097	3.4	0.419 (0.255)	16.79 (3.31)	185 (85)	49 (9)	28.73 (97.29)
10th Gear									
218.94 (163.26)	13133 (58.42)	6.25 (10.07)	2099	2.9	0.422 (0.257)	16.65 (3.28)	186 (85)	49 (9)	28.73 (97.29)
11th Gear									
216.65 (161.55)	11146 (49.58)	7.29 (11.73)	2099	2.4	0.427 (0.260)	16.46 (3.24)	191 (88)	49 (9)	28.72 (97.26)
12th Gear									
212.69 (158.60)	9459 (42.07)	8.43 (13.57)	2099	2.0	0.434 (0.264)	16.18 (3.19)	186 (86)	50 (10)	28.72 (97.26)

**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 2 test code procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1969**, Nebraska Summary 730, July 27, 2010.

Roger M. Hoy  
Director

M.F. Kocher  
D.R. Keshwani  
J.A. Smith  
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
At no load in 8th gear	71.4	71.0
Transport speed-no load- 16th gear		72.9
Bystander in 16th gear		86.2

**TIRES, BALLAST AND WEIGHT**

	With Ballast	Without Ballast
<b>Rear Tires</b> - No., size, ply & psi(kPa)	Four 480/80R46;***;17(115)	Four 480/80R46;***;11(75)
<b>Ballast</b> - Liquid (total)	None	None
- Cast Iron (total)	6770 lb (3071 kg)	None
<b>Front Tires</b> - No., size, ply & psi(kPa)	Two 480/70R30;****;29(200)	Two 480/70R30;****;23(160)
<b>Ballast</b> - Liquid (total)	None	None
- Cast Iron (total)	1280 lb (580 kg)	None
<b>Height of Drawbar</b>	19.0 in (485 mm)	18.5 in (470 mm)
<b>Static Weight with operator</b> - Rear	21230 lb (9630 kg)	15095 lb (6847 kg)
- Front	12565 lb (5699 kg)	10650 lb (4831 kg)
- Total	33795 lb(15329 kg)	25745 lb(11678 kg)

**DRAWBAR PERFORMANCE**  
**UNBALLASTED-FRONT DRIVE ENGAGED - 1750 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									
185.04 (137.98)	24623 (109.53)	2.82 (4.54)	2150	12.3	0.471 (0.287)	14.92 (2.94)	177 (81)	48 (9)	28.73 (97.29)
6th Gear									
210.59 (157.03)	24202 (107.66)	3.27 (5.25)	2098	9.6	0.441 (0.268)	15.93 (3.14)	184 (84)	51 (11)	28.72 (97.26)
7th Gear									
231.62 (172.72)	23685 (105.35)	3.67 (5.91)	2010	8.8	0.429 (0.261)	16.37 (3.23)	197 (92)	51 (11)	28.72 (97.26)
8th Gear									
243.77 (181.78)	22732 (101.12)	4.02 (6.47)	1884	7.2	0.419 (0.255)	16.77 (3.30)	200 (93)	52 (11)	28.72 (97.26)
9th Gear									
250.61 (186.88)	21462 (95.47)	4.38 (7.05)	1753	6.1	0.411 (0.250)	17.08 (3.36)	199 (93)	49 (9)	28.73 (97.29)
10th Gear									
253.36 (188.93)	18506 (82.32)	5.14 (8.26)	1752	4.5	0.407 (0.247)	17.26 (3.40)	202 (94)	49 (9)	28.73 (97.29)
11th Gear									
253.44 (188.99)	15780 (70.19)	6.03 (9.70)	1751	3.4	0.406 (0.247)	17.33 (3.41)	203 (95)	49 (9)	28.72 (97.26)
12th Gear									
252.47 (188.27)	13554 (60.29)	6.99 (11.24)	1751	2.8	0.407 (0.247)	17.26 (3.40)	202 (94)	50 (10)	28.72 (97.26)
13th Gear									
249.57 (186.10)	11313 (50.32)	8.27 (13.31)	1751	2.2	0.413 (0.251)	17.01 (3.35)	198 (92)	50 (10)	28.72 (97.26)

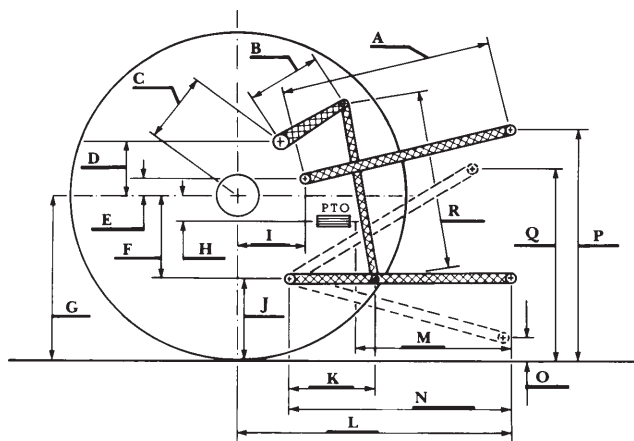
**DRAWBAR PERFORMANCE**  
**BALLASTED - FRONT DRIVE ENGAGED - 1750 RPM**  
**MAXIMUM POWER IN SELECTED GEARS**

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)
154.91 (115.52)	31099 (138.33)	1.87 (3.01)	2156	13.3	3rd Gear 0.506 (0.308)	13.86 (2.73)	181 (83)	68 (20)	28.76 (97.39)
199.74 (148.95)	29425 (130.89)	2.55 (4.10)	2118	10.1	4th Gear 0.458 (0.279)	15.33 (3.02)	191 (88)	68 (20)	28.76 (97.39)
217.20 (161.96)	28574 (127.10)	2.85 (4.59)	2088	9.0	5th Gear 0.434 (0.264)	16.17 (3.18)	193 (89)	69 (21)	28.76 (97.39)
234.74 (175.05)	27553 (122.56)	3.20 (5.14)	2015	7.9	6th Gear 0.422 (0.257)	16.64 (3.28)	202 (95)	69 (21)	28.76 (97.39)
244.77 (182.52)	26338 (117.16)	3.49 (5.61)	1875	7.1	7th Gear 0.418 (0.254)	16.81 (3.31)	202 (94)	70 (21)	28.76 (97.39)
250.91 (187.10)	24705 (109.89)	3.81 (6.13)	1756	5.7	8th Gear 0.413 (0.251)	17.01 (3.35)	201 (94)	70 (21)	28.76 (97.39)
251.88 (187.82)	21255 (94.55)	4.45 (7.15)	1751	4.5	9th Gear 0.412 (0.251)	17.04 (3.36)	201 (94)	71 (22)	28.76 (97.39)
255.05 (190.19)	18534 (82.44)	5.16 (8.30)	1750	3.6	10th Gear 0.405 (0.246)	17.33 (3.41)	201 (94)	71 (22)	28.76 (97.39)
251.77 (187.74)	15593 (69.36)	6.06 (9.74)	1752	2.7	11th Gear 0.411 (0.250)	17.10 (3.37)	201 (94)	72 (22)	28.76 (97.39)
252.94 (188.62)	13512 (60.11)	7.02 (11.30)	1755	2.2	12th Gear 0.410 (0.249)	17.12 (3.37)	201 (94)	72 (22)	28.76 (97.39)
252.38 (188.20)	11431 (50.85)	8.28 (13.33)	1748	1.9	13th Gear 0.409 (0.249)	17.15 (3.38)	202 (94)	73 (23)	28.76 (97.39)

## HYDRAULIC PERFORMANCE

CATEGORY:	III	III	IVN
Quick Attach: Yes			
OECD Static test			
Lift cylinders:	<u>2 x 100 mm</u>	<u>1x100 mm &amp; 1x112 mm</u>	<u>2x112 mm</u>
Maximum force exerted through whole range:	15683 lbs (69.8 kN)	17719 lbs (78.8 kN)	18326 lbs (81.5 kN)
<b>three outlet sets combined</b>			
i) Sustained pressure at compensator cutoff:	<u>85 cc pump</u>	<u>63 cc pump</u>	
	2912 psi (201 bar)	2940 psi (203 bar)	
ii) Pump delivery rate at minimum pressure and rated engine speed:	63.6 GPM(240.9 l/min)	46.4 GPM(175.7 l/min)	
iii) Pump delivery rate at maximum hydraulic power:	63.1 GPM(238.9 l/min)	46.0 GPM(174.1 l/min)	
Delivery pressure:	2501 psi (172 bar)	2690 psi (185 bar)	
Power:	92.1 HP (68.7 kW)	72.2 HP (53.8 kW)	
<b>single outlet set</b>			
ii) Pump delivery rate at minimum pressure and rated engine speed:	40.3 GPM(152.4 l/min)	40.8 GPM(154.6 l/min)	
iii) Pump delivery rate at maximum hydraulic power:	39.4 GPM(149.0 l/min)	40.4 GPM(153.0 l/min)	
Delivery pressure:	2195 psi (151 bar)	2119 psi (146 bar)	
Power:	50.4 HP (37.6 kW)	50.0 HP (37.3 kW)	

### HITCH DIMENSIONS AS TESTED—NO LOAD



	Category III		Category IVN	
	inch	mm	inch	mm
A	29.3	744	27.1	689
B	20.5	520	20.5	520
C	20.9	532	20.9	532
D	18.9	480	18.9	480
E	12.0	304	12.0	304
F	14.4	365	14.4	365
G	35.6	905	37.0	940
H	7.9	200	7.9	200
I	21.9	555	21.9	555
J	21.2	540	22.6	575
K	28.7	730	28.9	733
L	49.3	1252	56.6	1438
*L'	53.4	1357	62.5	1588
M	22.4	569	29.7	755
N	42.6	1081	45.7	1162
O	9.0	230	9.0	230
P	43.2	1099	49.7	1262
Q	39.4	1001	40.7	1035
R	42.8	1087	43.5	1106

\*L' to Quick Attach ends



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