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2010

## Test 1970: John Deere 8295RT

Nebraska Tractor Test Lab

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# NEBRASKA OECD TRACTOR TEST 1970—SUMMARY 731

## JOHN DEERE 8295RT 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
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>					
<b>Rated Engine Speed—(PTO speed—1048 rpm)</b>					
242.81 (181.06)	2100	13.34 (50.51)	0.386 (0.235)	18.20 (3.58)	
<b>Standard Power Take-off Speed(1000 rpm)</b>					
267.29 (199.32)	2004	14.38 (54.43)	0.378 (0.230)	18.59 (3.66)	
<b>Maximum Power (1 hour)</b>					
279.14 (208.16)	1749	14.98 (56.70)	0.377 (0.229)	18.64 (3.67)	

#### VARYING POWER AND FUEL CONSUMPTION

242.81 (181.06)	2100	13.34 (50.51)	0.386 (0.235)	18.20 (3.58)	Air temperature
211.62 (157.81)	2152	12.14 (45.96)	0.403 (0.245)	17.43 (3.43)	75°F (24°C)
159.62 (119.03)	2162	10.09 (38.18)	0.444 (0.270)	15.82 (3.12)	Relative humidity
106.94 (79.75)	2175	7.66 (29.00)	0.503 (0.306)	13.96 (2.75)	27%
53.92 (40.21)	2186	5.30 (20.08)	0.691 (0.420)	10.16 (2.00)	Barometer
1.87 (1.39)	2194	4.08 (15.43)	15.315 (9.316)	0.46 (0.09)	28.49" Hg(96.48 kPa)

Maximum torque - 913 lb.-ft. (1238 Nm) at 1501 rpm

Maximum torque rise - 50.4%

Torque rise at 1698 engine rpm - 41%

Power increase at 1749 rpm - 15.0%

#### 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)
<b>Maximum Power—8th Gear</b>									
212.62 (158.55)	17521 (77.94)	4.55 (7.32)	2099	2.2	0.443 (0.269)	15.87 (3.13)	195 (91)	64 (18)	28.59 (96.82)
<b>75% of Pull at Maximum Power—8th Gear</b>									
164.59 (122.73)	13109 (58.31)	4.71 (7.58)	2156	1.5	0.490 (0.298)	14.34 (2.83)	196 (91)	72 (22)	28.58 (96.78)
<b>50% of Pull at Maximum Power—8th Gear</b>									
111.16 (82.89)	8755 (38.95)	4.76 (7.66)	2168	1.0	0.559 (0.340)	12.55 (2.47)	189 (87)	74 (23)	28.58 (96.78)
<b>75% of Pull at Reduced Engine Speed—11th Gear</b>									
164.22 (122.46)	13089 (58.22)	4.71 (7.57)	1392	1.5	0.425 (0.258)	16.54 (3.26)	198 (92)	73 (23)	28.58 (96.78)
<b>50% of Pull at Reduced Engine Speed—11th Gear</b>									
111.70 (83.29)	8760 (38.97)	4.78 (7.69)	1408	0.9	0.460 (0.280)	15.28 (3.01)	195 (91)	75 (24)	28.58 (96.78)

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

**Dates of tests:** April 28 - May 12, 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 Total time engine was operated: 26.5 hours

**ENGINE:** Make John Deere Diesel Type six cylinder vertical with turbocharger and air to air aftercooler Serial No.\*RG6090L070215\* 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: 90.0 - 97.2 lb/h (40.8 - 44.1 kg/h) High idle: 2175 - 2225 rpm Turbo boost: nominal 26.1 - 30.5 psi (180 - 210 kPa) as measured 26.8 psi (185 kPa)

**CHASSIS:** Type tracklayer-rubber tracked Serial No.\*1RW8295RC9P901309\* Track width 76.0" (1930 mm) to 120.0" (3048 mm) Length of track on ground 99.0" (2515 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 1.13 (1.82) second 1.52 (2.44) third 2.01 (3.24) fourth 2.70 (4.34) fifth 3.03 (4.87) sixth 3.49 (5.62) seventh 4.06 (6.53) eighth 4.67 (7.52) ninth 5.40 (8.69) tenth 6.23 (10.02) eleventh 7.23 (11.64) twelfth 8.34 (13.42) thirteenth 9.82 (15.81) fourteenth 13.16 (21.18) fifteenth 17.52 (28.20) sixteenth 23.46 (37.76) reverse 1.06 (1.70), 2.83 (4.56), 3.57 (5.75), 6.56 (10.56) @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 2004 engine rpm Unladen tractor mass 33660 lb (15268 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)	Hp.hr/gal (kW.h/l)	Temp.°F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
159.40 (118.86)	32613 (145.07)	1.84 (2.95)	2153	12.3	3rd Gear 0.530 (0.323)	13.24 (2.61)	182 (83)	60 (16)	28.19 (95.46)
195.02 (145.43)	29569 (131.53)	2.48 (3.98)	2099	8.6	4th Gear 0.485 (0.295)	14.48 (2.85)	189 (87)	60 (16)	28.19 (95.46)
197.79 (147.49)	26309 (117.03)	2.82 (4.54)	2098	6.6	5th Gear 0.478 (0.291)	14.68 (2.89)	184 (84)	57 (14)	28.18 (95.43)
203.19 (151.52)	22963 (102.14)	3.32 (5.34)	2100	4.7	6th Gear 0.463 (0.282)	15.17 (2.99)	187 (86)	58 (14)	28.18 (95.43)
210.84 (157.22)	20180 (89.76)	3.92 (6.31)	2100	2.9	7th Gear 0.447 (0.272)	15.71 (3.10)	192 (89)	63 (17)	28.60 (96.85)
212.62 (158.55)	17521 (77.94)	4.55 (7.32)	2099	2.2	8th Gear 0.443 (0.269)	15.87 (3.13)	195 (91)	64 (18)	28.59 (96.82)
210.25 (156.78)	14935 (66.43)	5.28 (8.50)	2099	1.8	9th Gear 0.448 (0.272)	15.68 (3.09)	193 (90)	61 (16)	28.60 (96.85)
210.21 (156.75)	12901 (57.38)	6.11 (9.83)	2099	1.5	10th Gear 0.448 (0.273)	15.67 (3.09)	195 (91)	67 (19)	28.59 (96.82)
205.64 (153.35)	10807 (48.07)	7.14 (11.49)	2100	1.2	11th Gear 0.455 (0.277)	15.44 (3.04)	196 (91)	69 (21)	28.59 (96.82)
203.50 (151.75)	9275 (41.26)	8.23 (13.24)	2100	1.0	12th Gear 0.458 (0.279)	15.32 (3.02)	198 (92)	70 (21)	28.59 (96.82)

**TRACTOR SOUND LEVEL WITH CAB**

**dB(A)**

At no load in 8th gear	69.4
Transport speed - no load - 16th gear	73.8
Bystander in 16th gear	85.8

**TIRES AND WEIGHT**

**Tested Without Ballast**

Track width	25.0 in (635 mm)
Height of Drawbar	18.0 in (455 mm)
Static Weight with operator	33835 lb(15347 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 injection pump inlet was maintained at 111°F(44°C). The performance figures on this summary were taken from a test conducted under the OECD Code 2 test procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1970**, Nebraska Summary 731, July 27, 2010.

Roger M. Hoy  
Director

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

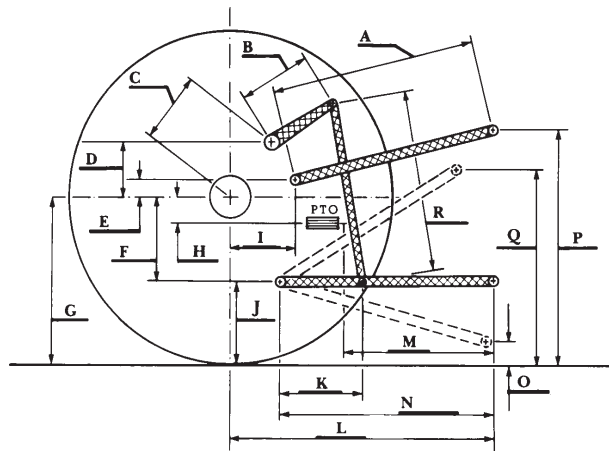
**DRAWBAR PERFORMANCE**  
**Unballasted - 1750 RPM**  
**MAXIMUM POWER IN SELECTED GEARS**

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)	
160.02 (119.33)	32799 (145.90)	1.83 (2.95)	2153	12.4	3rd Gear 0.531 (0.323)	13.23 (2.61)	182 (83)	60 (16)	28.19 (95.46)
197.69 (147.41)	30653 (136.35)	2.42 (3.89)	2083	10.2	4th Gear 0.485 (0.295)	14.49 (2.85)	196 (91)	61 (16)	28.19 (95.46)
206.03 (153.63)	28184 (125.37)	2.74 (4.41)	2062	7.8	5th Gear 0.473 (0.288)	14.85 (2.93)	187 (86)	58 (14)	28.18 (95.43)
224.02 (167.05)	27295 (121.42)	3.08 (4.96)	1991	6.8	6th Gear 0.453 (0.276)	15.50 (3.05)	199 (93)	59 (15)	28.19 (95.46)
233.21 (173.90)	24986 (111.14)	3.50 (5.63)	1918	5.1	7th Gear 0.440 (0.268)	15.96 (3.14)	199 (93)	63 (17)	28.20 (95.50)
241.28 (179.92)	24319 (108.18)	3.72 (5.99)	1757	4.3	8th Gear 0.433 (0.264)	16.20 (3.19)	198 (92)	65 (18)	28.59 (96.82)
243.25 (181.39)	20995 (93.39)	4.35 (6.99)	1755	3.3	9th Gear 0.430 (0.261)	16.34 (3.22)	199 (93)	62 (17)	28.60 (96.85)
245.65 (183.18)	18222 (81.05)	5.06 (8.14)	1753	2.4	10th Gear 0.425 (0.258)	16.54 (3.26)	197 (92)	68 (20)	28.59 (96.82)
242.83 (181.07)	15423 (68.60)	5.91 (9.50)	1755	1.9	11th Gear 0.432 (0.263)	16.26 (3.20)	196 (91)	69 (21)	28.59 (96.82)
241.29 (179.93)	13236 (58.88)	6.84 (11.00)	1753	1.3	12th Gear 0.433 (0.263)	16.22 (3.20)	197 (92)	70 (21)	28.59 (96.82)
239.27 (178.42)	11081 (49.29)	8.10 (13.03)	1753	0.9	13th Gear 0.439 (0.267)	16.00 (3.15)	197 (91)	72 (22)	28.58 (96.78)

## HYDRAULIC PERFORMANCE

CATEGORY:	III	IVN
Quick Attach: yes		
OECD Static test		
Maximum force exerted through whole range:	17714 lbs (78.8 kN)	21167 lbs (94.2 kN)
	<u>63 cc pump</u>	<u>85 cc pump</u>
i) Sustained pressure at compensator cutoff:	2973 psi (205 bar)	2902 psi (200 bar)
	<b>three outlet sets combined</b>	
ii) Pump delivery rate at minimum pressure and rated engine speed:	48.4 GPM (183.3 l/min)	65.0 GPM (246.1 l/min)
iii) Pump delivery rate at maximum hydraulic power:	47.4 GPM (179.5 l/min)	64.7 GPM (245.0 l/min)
Delivery pressure:	2740 psi (189 bar)	2429 psi (168 bar)
Power:	75.8 HP (56.5 kW)	91.7 HP (68.4 kW)
	<b>single outlet set</b>	
ii) Pump delivery rate at minimum pressure and rated engine speed:	41.2 GPM (155.9 l/min)	42.2 GPM (159.6 l/min)
iii) Pump delivery rate at maximum hydraulic power:	39.4 GPM (149.1 l/min)	41.2 GPM (156.1 l/min)
Delivery pressure:	2286 psi (158 bar)	2032 psi (140 bar)
Power:	52.5 HP (39.2 kW)	48.9 HP (36.4 kW)

## HITCH DIMENSIONS AS TESTED - NO LOAD



	Category III		Category IVN	
	inch	mm	inch	mm
A	28.5	725	28.1	715
B	20.5	520	20.5	520
C	24.8	631	24.8	631
D	24.2	615	24.2	615
E	10.8	275	12.6	320
F	11.5	292	11.5	292
G	35.0	888	35.0	888
H	3.1	80	3.1	80
I	17.3	440	18.5	470
J	23.5	596	23.5	596
K	38.6	981	39.8	1011
L	50.5	1282	53.6	1361
*L'	54.6	1387	59.5	1511
M	27.5	699	30.6	777
N	42.6	1082	45.7	1161
O	9.0	230	9.0	230
P	45.5	1155	50.5	1283
Q	39.7	1008	41.1	1043
R	44.8	1138	44.7	1135

\*L' to Quick Attach ends



**JOHN DEERE 8295RT DIESEL**

Institute of Agriculture and Natural Resources  
University of Nebraska-Lincoln