

NEBRASKA OECD TRACTOR TEST 2098 - SUMMARY 963

JOHN DEERE 8245R DIESEL

16 SPEED

Chassis Serial numbers 90001 and higher

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

Dates of tests: October 14 - 27, 2014

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

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Diesel Consumption		D.E.F. Consumption		Mean Atmospheric Conditions
		Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW/h/l)	Gal/hr (l/h)	

MAXIMUM POWER AND FUEL CONSUMPTION

Rated Engine Speed—(PTO speed—1048 rpm)						
215.88 (160.98)	2099	11.84 (44.81)	0.386 (0.235)	18.24 (3.59)	0.26 (1.00)	Fuel used during active exhaust regeneration-0.98 gal (3.71 l) (see note 1, p.2)
Standard Power Take-off Speed(1000 rpm)						
235.92 (175.93)	2003	12.52 (47.40)	0.373 (0.227)	18.84 (3.71)	0.29 (1.11)	
Maximum Power (1 hour)						
244.37 (182.23)	1699	12.56 (47.54)	0.362 (0.220)	19.46 (3.83)	0.29 (1.09)	

VARYING POWER AND FUEL CONSUMPTION

215.88 (160.98)	2099	11.84 (44.81)	0.386 (0.235)	18.24 (3.59)	0.26 (1.00)	Air temperature
188.33 (140.44)	2154	10.78 (40.81)	0.403 (0.245)	17.47 (3.44)	0.24 (0.91)	73°F (23°C)
141.85 (105.78)	2163	8.74 (33.09)	0.434 (0.264)	16.23 (3.20)	0.19 (0.71)	Relative humidity
95.16 (70.96)	2174	6.96 (26.36)	0.515 (0.315)	13.66 (2.69)	0.17 (0.63)	31%
47.61 (35.50)	2181	5.38 (20.36)	0.795 (0.484)	8.85 (1.74)	0.10 (0.39)	Barometer
2.11 (1.57)	2194	3.52 (13.31)	11.748 (7.146)	0.60 (0.12)	0.03 (0.10)	28.70" Hg (97.19 kPa)

Maximum Torque - 782 lb.-ft. (1060 Nm) at 1500 rpm

Maximum Torque Rise - 44.8%

Torque rise at 1679 engine rpm - 41%

Power increase at 1699 rpm - 13.2%

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)	D.E.F Consumption Hp.hr/gal (kW/h/l)	D.E.F Consumption lb/hp.hr (kg/kW.h)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—8th Gear										
198.53 (148.04)	15906 (70.75)	4.68 (7.53)	2099	2.0	0.418 (0.254)	16.82 (3.31)	0.012 (0.007)	196 (91)	69 (20)	28.72 (97.26)
75% of Pull at Maximum Power—8th Gear										
154.47 (115.19)	11940 (53.11)	4.85 (7.81)	2159	1.2	0.448 (0.272)	15.72 (3.10)	0.012 (0.007)	188 (87)	69 (21)	28.71 (97.22)
50% of Pull at Maximum Power—8th Gear										
104.27 (77.75)	7963 (35.42)	4.91 (7.90)	2170	0.8	0.525 (0.319)	13.41 (2.64)	0.012 (0.007)	188 (87)	72 (22)	28.68 (97.12)
75% of Pull at Reduced Engine Speed—11th Gear										
154.54 (115.24)	11919 (53.02)	4.87 (7.83)	1399	1.2	0.390 (0.237)	18.06 (3.56)	0.012 (0.007)	197 (91)	70 (21)	28.71 (97.22)
50% of Pull at Reduced Engine Speed—11th Gear										
104.45 (77.88)	7910 (35.18)	4.95 (7.97)	1415	0.7	0.422 (0.257)	16.66 (3.28)	0.015 (0.009)	189 (87)	73 (23)	28.67 (97.09)

CONSUMABLE Fluids, OIL and TIME: Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.8450 **Fuel weight** 7.036 lbs/gal (0.843 kg/l) **Diesel Exhaust Fluid (DEF)** 32% aqueous urea solution **DEF weight** 9.071 lbs/gal (1.087 kg/l) **Oil SAE 10W-30 API service classification CJ-4** **Transmission and hydraulic lubricant** John Deere Hy-Gard fluid **Front axle lubricant** John Deere Hy-Gard fluid **Total time engine was operated:** 20.5 hours

ENGINE: Make John Deere **Diesel Type** six cylinder vertical with two turbochargers and air to air aftercooler and D.E.F (diesel exhaust fluid) exhaust treatment **Serial No.***RG6090U006121* **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 4.661" x 5.354" (118.4 mm x 136.0 mm) **Compression ratio** 16.0 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 **Exhaust** DOC (diesel oxidation catalyst), SCR (selective catalyst reduction) and regenerative DPF (diesel particulate filter) integrated within a vertical muffler **Cooling medium temperature control** thermostat and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate: 78.0 - 84.6 lb/h (35.4 - 38.4 kg/h) **High idle:** 2190 - 2210 rpm **Turbo boost:** nominal 14.5 - 17.4 psi (100 - 120 kPa) as measured 16.2 psi (112 kPa)

CHASSIS: Type front wheel assist with duals **Serial No.***1RW8245RCEP093520* **Tread width** rear 60.0" (1524 mm) to 132.6" (3368 mm) front 60.0" (1524 mm) to 88.0" (2235 mm) **Wheelbase** 121.3" (3080 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 1.16 (1.87) second 1.55 (2.50) third 2.07 (3.33) fourth 2.77 (4.46) fifth 3.11 (5.00) sixth 3.58 (5.76) seventh 4.16 (6.70) eighth 4.80 (7.72) ninth 5.54 (8.92) tenth 6.39 (10.28) eleventh 7.42 (11.94) twelfth 8.56 (13.77) thirteenth 10.09 (16.23) fourteenth 13.50 (21.73) fifteenth 17.98 (28.93) sixteenth 24.08 (38.76) reverse 1.09 (1.75), 2.91 (4.68), 3.34 (5.39), 6.73 (10.84) @ 1500 engine rpm

DRAWBAR PERFORMANCE
UNBALLASTED - FRONT DRIVE ENGAGED - 2100 RPM
DRAWBAR 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)	D.E.F. Consumption lb/hp.hr (kg/kW.h)	Temp. °F(°C) cool- ing dry bulb	Barom. inch Hg (kPa)		
					4th Gear					
159.76 (119.13)	24702 (109.88)	2.43 (3.90)	2152	14.3	0.498 (0.303)	14.13 (2.78)	0.011 (0.007)	190 (88)	52 (11)	28.49 (96.48)
					5th Gear					
183.62 (136.93)	24300 (108.09)	2.84 (4.56)	2123	10.1	0.453 (0.276)	15.53 (3.06)	0.010 (0.006)	190 (88)	57 (14)	28.51 (96.55)
					6th Gear					
195.62 (145.87)	21547 (95.84)	3.41 (5.48)	2100	4.6	0.426 (0.259)	16.51 (3.25)	0.011 (0.007)	190 (88)	59 (15)	28.52 (96.58)
					7th Gear					
198.63 (148.11)	18486 (82.23)	4.03 (6.49)	2101	2.8	0.419 (0.255)	16.78 (3.31)	0.010 (0.006)	191 (88)	60 (16)	28.52 (96.58)
					8th Gear					
198.53 (148.04)	15906 (70.75)	4.68 (7.53)	2099	2.0	0.418 (0.254)	16.82 (3.31)	0.012 (0.007)	196 (91)	69 (20)	28.72 (97.26)
					9th Gear					
197.43 (147.22)	13637 (60.66)	5.43 (8.74)	2099	1.6	0.422 (0.257)	16.67 (3.28)	0.011 (0.007)	193 (89)	65 (18)	28.76 (97.39)
					10th Gear					
196.10 (146.23)	11709 (52.08)	6.28 (10.11)	2099	1.4	0.423 (0.257)	16.63 (3.28)	0.011 (0.007)	190 (88)	64 (18)	28.79 (97.49)
					11th Gear					
193.47 (144.27)	9913 (44.10)	7.32 (11.78)	2100	0.9	0.429 (0.261)	16.39 (3.23)	0.012 (0.007)	193 (89)	67 (19)	28.76 (97.39)
					12th Gear					
194.25 (144.85)	8613 (38.31)	8.46 (13.62)	2100	0.7	0.427 (0.260)	16.49 (3.25)	0.012 (0.007)	202 (94)	67 (19)	28.74 (97.33)

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
At no load in 8th gear	67.3	67.4
Transport speed-no load- 16th gear		69.4
Bystander in 16th gear		84.9

TIRES AND WEIGHT

Rear Tires - No., size, ply & psi(kPa)
Front Tires - No., size, ply & psi(kPa)
Height of Drawbar
Static Weight with operator - Rear
- Front
- Total

Tested Without Ballast

Four 480/80R46;***;12(85)
Two 420/90R30;***;20(140)
19.5 in (495 mm)
15120 lb (6858 kg)
10260 lb (4654 kg)
25380 lb(11512 kg)

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** 25205 lb (11433 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

NOTE 1: The manufacturer declares that the average time between active regenerations is 50 hours, while operated in Auto Filter Cleaning Mode, at rated speed, full load, under steady state conditions.

NOTE 2: The performance data on this report applies to tractors with chassis serial numbers that end with 90001 and higher.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. This tractor did not meet the manufacturer's remote hydraulic flow claim of 85 GPM (321l/min) with the dual pumps combined. For the maximum power tests the fuel temperature at the injection pump inlet was maintained at 101°F (38°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. **2098**, Nebraska Summary 963, December 19, 2014.

Roger M. Hoy
Director

M.F. Kocher
J.D. Luck
P.J. Jasa
Board of Tractor Test Engineers

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)	D.E.F. Consumption Hp.hr/gal (kW.h/l)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)	
4th Gear										
159.96 (119.28)	24690 (109.82)	2.43 (3.91)	2152	14.3	0.497 (0.303)	14.15 (2.79)	0.011 (0.007)	190 (88)	52 (11)	28.49 (97.48)
5th Gear										
183.64 (136.94)	24222 (107.74)	2.85 (4.58)	2126	10.0	0.453 (0.275)	15.55 (3.06)	0.010 (0.006)	190 (88)	56 (13)	28.51 (96.55)
6th Gear										
202.49 (151.00)	23992 (106.72)	3.17 (5.09)	2025	8.1	0.430 (0.261)	16.38 (3.23)	0.011 (0.007)	192 (89)	58 (14)	28.52 (96.58)
7th Gear										
218.63 (163.03)	23050 (102.53)	3.56 (5.73)	1915	5.9	0.408 (0.248)	17.25 (3.40)	0.008 (0.005)	197 (91)	61 (16)	28.52 (96.58)
8th Gear										
222.92 (166.23)	21125 (93.97)	3.96 (6.37)	1815	4.1	0.393 (0.239)	17.90 (3.53)	0.011 (0.007)	205 (96)	62 (17)	28.51 (96.55)
9th Gear										
225.68 (168.29)	19602 (87.19)	4.32 (6.94)	1700	3.4	0.390 (0.237)	18.06 (3.56)	0.012 (0.007)	209 (98)	69 (20)	28.71 (97.22)
10th Gear										
227.09 (169.34)	16929 (75.30)	5.03 (8.10)	1700	2.4	0.387 (0.235)	18.18 (3.58)	0.010 (0.006)	207 (97)	65 (18)	28.78 (97.46)
11th Gear										
226.80 (169.12)	14465 (64.34)	5.88 (9.46)	1700	1.8	0.387 (0.236)	18.16 (3.58)	0.011 (0.007)	208 (98)	67 (19)	28.75 (97.36)
12th Gear										
227.60 (169.72)	12544 (55.80)	6.80 (10.94)	1700	1.5	0.386 (0.235)	18.24 (3.59)	0.011 (0.006)	210 (99)	67 (20)	28.73 (97.29)
13th Gear										
225.44 (168.11)	10506 (46.73)	8.05 (12.96)	1700	1.0	0.390 (0.237)	18.06 (3.56)	0.011 (0.007)	212 (100)	69 (21)	28.73 (97.29)

HYDRAULIC PERFORMANCE

CATEGORY: III/IVN

Quick Attach: Yes

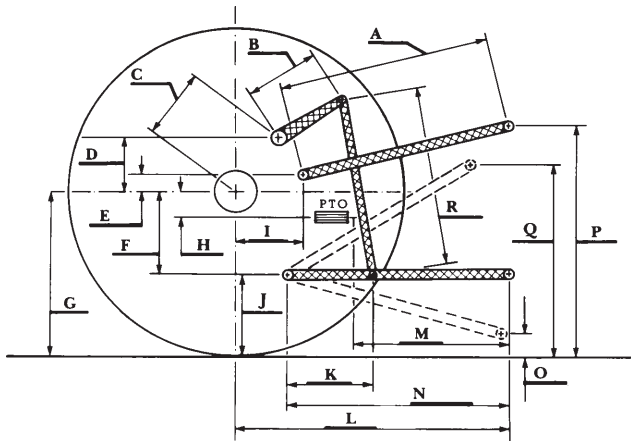
OECD Static test

	Lift cylinders	Category
Maximum force exerted through whole range:	14274 lbs (63.5 kN) 1x90 mm & 1x100 mm	III
	18869 lbs (83.9 kN) 1x100 mm & 1x115 mm	III
	20254 lbs (90.1 kN) 2x115 mm	IVN
	<u>85 cc pump</u>	<u>85 cc and 35cc pumps combined</u>
i) Sustained pressure at compensator cutoff:	2915 psi (201 bar)	2941 psi (203 bar)
	three outlet sets combined	
ii) Pump delivery rate at minimum pressure and rated engine speed:	60.6 GPM (229.3 l/min)	84.2 GPM (318.7 l/min)
iii) Pump delivery rate at maximum hydraulic power:	60.3 GPM (228.3 l/min)	80.0 GPM (302.9 l/min)
Delivery pressure:	2474 psi (171 bar)	2114 psi (146 bar)
Power:	87.1 HP (64.9 kW)	98.7 HP (73.6 kW)
	single outlet set	
	<u>1/2" couplers</u>	<u>3/4" couplers</u>
ii) Pump delivery rate at minimum pressure and rated engine speed:	37.0 GPM (140.2 l/min)	42.9 GPM (162.5 l/min)
iii) Pump delivery rate at maximum hydraulic power:	35.3 GPM (133.7 l/min)	41.5 GPM (157.2 l/min)
Delivery pressure:	2289 psi (158 bar)	2301 psi (159 bar)
Power:	47.1 HP (35.2 kW)	55.8 HP (41.6 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD

	category III		category IVN	
	inch	mm	inch	mm
A	29.1	740	28.5	725
B	20.5	520	20.5	520
C	20.9	532	20.9	532
D	18.9	480	18.9	480
E	7.3	185	12.0	304
F	14.4	365	14.4	365
G	38.2	970	38.2	970
H	10.2	260	10.2	260
I	22.4	569	23.6	599
J	23.8	605	23.8	605
K	28.7	730	28.7	730
L	51.6	1310	52.8	1340
*L'	55.7	1415	58.7	1490
M	24.7	627	26.3	667
N	38.9	989	40.1	1019
O	9.1	230	9.1	230
P	50.1	1272	50.1	1272
Q	42.9	1090	44.7	1135
R	45.5	1155	45.7	1160

*L' to Quick Attach ends



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